# REQUEST FOR PROPOSALS

# PREMISE CABLING, EQUIPMENT INSTALLATION, AND CONFIGURATION SERVICES

For the State of Tennessee SBC NUMBER: 529/000-28-2007

## STATE OF TENNESSEE

**Department of Finance and Administration** 



5 December 2007



# STATE OF TENNESSEE Department of Finance and Administration

# REQUEST FOR PROPOSALS For

# PREMISE CABLING, EQUIPMENT INSTALLATION, AND CONFIGURATION SERVICES

#### For Tennessee

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#### 1 INTRODUCTION

#### 1.1 Statement of Purpose

The purpose of this Request for Proposals (RFP) is to define the State's minimum requirements, solicit proposals, and gain adequate information by which the State may evaluate the services offered by Proposers.

The State of Tennessee, Department of Finance and Administration, Division of Real Property Administration, hereinafter referred to as the State, intends to secure a contract for Premise Cabling, Equipment Installation and Configuration (when applicable) Services.

The contract resulting from this RFP shall require Premise Cabling Services for installation and maintenance of the communications wiring infrastructure within State of Tennessee facilities, including building and campus wiring, from the demarcation point to the user outlets. The contract also will contain requirements for equipment installations and possible configurations (for example: telephones for State prisons and data cabinets).

1.1.1 The Contractor shall be the statewide source of supply for premise cabling installations and additions and certain equipment installations. This will include: design, materials, installation labor, project management, documentation (including as-built), testing, and maintenance.

The intent is to normally use this source of supply for premise cabling projects. But, on any particular application, the State may choose to issue another RFP and allow other vendors, including the Contractor, to submit proposals.

- 1.1.2 The premise wiring systems provided under this Contract must be certified by a independent party as an end-to-end CAT6 TIA/EIA compliant solutions. Contractor shall be responsible for maintaining certification for this end to end solution plus verification of up to date compliance to latest revisions of standards. Contractor shall provide certification for each installation, and provide to the State a twenty (20) year warranty on all parts, labor and component performance.
  - 1.1.2.1. Proposers are not required to be AVAYA SYSTIMAX certified at the time of proposal submittal. However, the apparent best-evaluated Proposer must be certified by the contract start date.
  - 1.1.2.2. The responsibility of obtaining and maintaining the contractor chosen, State approved, end-to-end solution certification resides solely with the contractor; the State will not intercede on the part of the vendor to obtain this certification.
- 1.1.3 While most State of Tennessee agencies anticipate expanding needs for premise cabling upgrades and new installations, there is no way to predict the number or scale of projects which will require these services. This RFP makes no guarantees, either stated or implied, about the demand for Services requested within.

#### 1.2 Scope of Service

Section A of the *pro forma* contract details the scope of services and deliverables that the State requires. The *pro forma* Contract also includes the terms and conditions required by the State.

#### 1.3 Contract Duration

The initial term of the contract resulting from this RFP is three (3) years. Prices quoted in response to this RFP will remain fixed for the entirety of the initial 3-year term. With the exception of State-approved price escalations as described in the *proforma* Contract, the State exercises the option to extend the contract for an additional period of time, the prices will change in accordance with the Consumer Price Index (CPI)

#### 1.4 Contract Bond Requirement

The State shall require the successful Proposer to provide a Contract Bond (a performance and payment bond) with any signed contract resulting from this RFP.

- 1.4.1 Provisions for executing the Contract Bond are described in the *pro forma* Contract.
- 1.4.2 No substitutions for the required bond will be allowed. The bond shall be written by a surety company licensed to transact business in Tennessee.

#### 1.5 Contractor Licensure

Appropriate Tennessee Contractor License(s) are required, and demonstration of current licensure is a mandatory part of the Proposal submission.

- 1.5.1 Proposers shall be familiar with the Contractors Licensing Act of 1994, as currently amended (codified in Tennessee Code Annotated Sections 62-6-101, et seq.). A contract will not be awarded to a Proposer whose proposal is in conflict with State of Tennessee licensing law..
- 1.5.2 As the work performed under a Contract pursuant to this RFP includes installation as well as supply of materials, the Proposal submission constitutes a bid and Tennessee Contractor license(s) are required. These classifications are outlined in Rule 0680-1-.16 under Electrical Contracting and under Specialty.
- 1.5.3 The following license classifications are considered acceptable for Proposers to bid: E; E-D; E-F; E-G; E-J; CE; CE-D; CE-F; CE-G; CE-J; S-Telecommunications; S-Fiberoptic; or S-Low Voltage Computer Wiring.
- 1.5.4 Proposer shall complete Proposal Package Cover Attachment which is to be affixed to the outside of the Proposal package.

(Proposers should verify that The Board for Licensing Contractors has current and correct licensure information on file. For inquiries contact:)

Carolyn Lazenby Board for Licensing Contractors 500 James Robinson Parkway, Suite 110 Nashville, TN 37243 (615) 592-3990 or 1-800-544-7693

#### 1.6 Insurance

Specific lines of coverage and limits of liability provided by Contractor shall be written in a comprehensive form, satisfactory to Owner in the following minimum requirements:

- 1.6.1 Comprehensive General Liability, including:
  - 1.6.1.1 Premises / Operations:

Underground / Explosion / Collapse;

Products / Completed Operations:

Contractual:

Independent Contractors;

Owner / Contractor Protective;

Broad Form Property Damage;

Personal Injury (Employment Exclusion deleted)

1.6.1.2 Combined single limits for bodily injury and property damage:

Each Occurrence: \$1,000,000

Aggregate: \$2,000,000

- 1.6.1.3 Products and Completed Operations to be maintained for one year after final payment.
- 1.6.1.4 Asbestos Abatement Insurance
  - 1.6.1.1.1 Non-friable Asbestos: If removal or abatement of non-friable asbestos is included in the Work, and Contractor's General Liability Insurance coverage excludes risks associated with asbestos, then Contractor shall provide evidence of a Special Endorsement.

- 1.6.1.1.2 Friable Asbestos: If removal or abatement of friable asbestos is included in the Work, then Contractor shall provide evidence of a Special Endorsement.
- 1.6.1.1.3 Special Endorsement: Evidence of a Special Endorsement shall be in the form of a Certificate of Insurance certifying a special endorsement for asbestos abatement insurance with a minimum \$500,000 limit of liability. If Contractor is performing no portion of the asbestos removal or abatement with its own forces, then Contractor, in lieu of its own such endorsement, may substitute a Certificate showing such special endorsement covering the subcontractor or sub-subcontractor actually performing the asbestos removal or abatement.
- 1.6.1.5 Comprehensive Automobile Liability:
  - 1.6.1.5.1 Including owned, hired, and non-owned vehicles; or, if there are no owned vehicles, Contractor may provide written certification of such and provide coverage limited to hired and non-owned vehicles.
  - 1.6.1.5.2 Bodily injury and property damage combined single limits:

Each Occurrence: \$500,000

- 1.6.1.6 Workers Compensation and Employer's Liability, (without restriction as to whether covered by Workmen's Compensation law):
  - 1.6.1.6.1 Workers Compensation: according to statute
  - 1.6.1.6.2 Employer's Liability: \$100,000
- 1.6.1.7 If an exposure exists, Aircraft and Watercraft Liability (owned & non-owned), with limits approved by Owner, shall be provided.
- 1.6.2 Certificate(s) of insurance provided to attest to coverages shall specifically cite each element of coverage and not less than limits set forth in subparagraph 1.6.1, as confirmation of complete coverage, and shall identify Contractor, Producer, insurance Carrier, Project, and certificate holder, and state Producer's notice requirements as set forth in 1.6.3. The term "Commercial General Liability" shall mean all of the coverages listed in 1.6.1 unless specifically noted otherwise in the certificate.
- 1.6.3 Contractor shall notify Owner in writing of changes in coverage or carrier not later than ten (10) days after notification of Contractor by Producer, or 10 days before Contractor makes a change, whichever occurs first.

#### 1.7 RFP Number

The State has assigned the following RFP identification number -- it should be referenced in all communications regarding this RFP. The RFP has been issued under the auspices of The State Building Commission (SBC). The State's official project number designating this RFP is as follows:

#### SBC NO. 529/000-28-2007

#### 1.8 RFP Communications

- 1.8.1 The Owner has assigned the following RFP identification number for referencing in all communications regarding the RFP: **SBC No. 529/000-28-2007**
- 1.8.2 Unauthorized contact regarding this RFP with employees or officials of the State of Tennessee other than the RFP Coordinator detailed below may result in disqualification from this procurement process.

1.8.3 Interested Parties must direct all communications regarding this RFP to the following RFP Coordinator, who is the State of Tennessee's only official point of contact for this RFP.

Lorraine C. Walla, RFP Coordinator Department of Finance and Administration William R. Snodgrass Tennessee Tower, Suite 2200 312 Eighth Avenue North Nashville, Tennessee 37243 Telephone: 615-741-6489 FAX: 615-741-6308

#### 1.9 Sales Tax Obligation

lorraine.walla@state.tn.us

The Department of Finance and Administration administers contracts for services rather than commodities. When a contractor purchases materials for use in providing services under a Finance and Administration contract, those purchases are not exempt from sales tax, even if the materials will become attached to or incorporated into real property owned by the State. Therefore, in order to seek reimbursement for sales taxes, the Contractor must include those taxes in its offered cost or bid.

#### 1.10 Disqualification due to Prior Unsatisfactory Conduct or Performance

- 1.10.1 Proposers shall assume the risk that any proposal is subject to disqualification as a result of prior unsatisfactory conduct or performance.
- 1.10.2 The State reserves the right to reject any proposal based upon prior unsatisfactory conduct or performance by the Proposer, or an affiliated contracting entity of the Proposer. For the purposes of this subsection, "affiliated contracting entity" includes any corporate predecessor of the proposing entity, a joint venture partner of the proposing entity, a joint proposer, or any entity owned, controlled, or managed by any person or entity which owns, controls, or manages a proposing entity.
- 1.10.3 The State shall have the sole discretion to determine what constitutes prior unsatisfactory conduct or performance which may include, but is not limited to the following:
  - a) conviction of a criminal offense relating to obtaining a state or federal government contract
  - b) submitting to the State of Tennessee invoices or other demands for payment for goods or services not actually provided, or for goods and services materially different from what was actually provided, where the contractor knew or should have known that the goods and services claimed were either not provided or were materially different than what was actually provided.
  - submitting to the State of Tennessee, for consideration in a proposal evaluation process or a contract negotiation, incorrect information which the Proposer knew or should have known was materially incorrect.
  - d) filing a procurement protest under T.C.A. 12-4-109 which the Review Committee has found to be in violation of T.C.A. 12-4-109(a)(1)(E)(ii), or filing a bid protest under T.C.A. 12-3-214 which the Board of Standards has found to be in violation of T.C.A. 12-3-1-214(b).
  - e) refusal, within the past ten years and without good cause, to perform a contract or a portion of a contract with the State of Tennessee as required by the contract documents.
  - f) failure to perform or unsatisfactory performance of one or more contracts with the State of Tennessee within the past ten years. This includes, but is not limited to failure to correct defective work, products, or services, or otherwise remedy defective performance a required by such contracts.

1.10.4 A disqualified Proposer will receive written notice of such disqualification after the State completes proposal evaluations, issues the notice of award, and opens the procurement files for public inspection. This notice will contain a brief statement of the reasons for the disqualification. Any Proposer aggrieved by disqualification may seek relief under the protest provisions set forth in Tennessee Code Annotated 12-4-109.

#### 1.11 Notice of Intent to Propose

A letter on company letterhead indicating a vendor's intent to respond to this RFP with a proposal should be sent to the RFP Coordinator no later than the *Letter of Intent to Propose* deadline. *Letters of Intent to Propose* may be delivered by facsimile transmission or email attachment. Vendors may withdraw their *Letters of Intent to Propose* at any time before the deadline for submitting a proposal.

Include the following information in the *Letter of Intent to Propose*:

Vendor Name

Name and Title of Vendor Main Contact

Address, Telephone Number, Facsimile Number, and Email Address of Vendor Main Contact

Signed Statement of Intent to Propose

NOTICE: Submittal of a *Letter of Intent to Propose* is not a prerequisite for submitting a proposal, but it is necessary to ensure a vendor's receipt of RFP amendments and other communications regarding the RFP.

#### 1.12 Proposal Deadline

Proposals shall be submitted no later than the Proposal Deadline time and date detailed in the Schedule of Events. Proposers shall respond to the written RFP and any exhibits, attachments, or amendments. A Proposer's failure to submit a proposal as required before the deadline shall cause the proposal to be disqualified.

Proposers assume the risk of the method of dispatch chosen. The State assumes no responsibility for delays caused by any delivery service. Postmarking by the due date shall <u>not</u> substitute for actual proposal receipt by the State. Late proposals shall not be accepted nor shall additional time be granted to any potential Proposer.

Proposals may not be delivered orally, by facsimile transmission, or by other telecommunication or electronic means.

#### 1.13 RFP Communications

- 1.9.1 The Owner has assigned the following RFP identification number for referencing in all communications regarding the RFP: **SBC No. 529/000-28-2007**
- 1.9.2 Unauthorized contact regarding this RFP with employees or officials of the State of Tennessee other than the RFP Coordinator detailed below may result in disqualification from this procurement process.
- 1.9.3 Interested Parties must direct all communications regarding this RFP to the following RFP Coordinator, who is the State of Tennessee's only official point of contact for this RFP.

Lorraine C. Walla, RFP Coordinator Department of Finance and Administration William R. Snodgrass Tennessee Tower, Suite 2200 312 Eighth Avenue North Nashville, Tennessee 37243 Telephone: 615-741-6489

FAX: 615-741-6308

#### 1.14 Pre-Proposal Conference

1.14.1. A Pre-Proposal conference for all potential Proposers, scheduled as shown in the RFP Schedule of Events, will be held at

William R. Snodgrass Tennessee Tower, Davidson Room, 3<sup>rd</sup> Floor 312 8<sup>th</sup> Avenue North, Nashville, Tennessee 37243.

A maximum of three representatives for a Proposer are permitted to attend. Allow sufficient time to locate vehicle parking at a commercial parking lot in the downtown Nashville area, and to obtain Visitor's Badges at the 7<sup>th</sup> Avenue entrance Security Station on the east side of the building. All visitors must use this entrance, and each must show proper identification such as a valid Driver's License.

- 1.14.2 The purpose of the conference is to discuss the types of work expected with the prospective Proposers and to allow them to ask questions concerning the RFP.
- 1.14.3 Verbal responses given at the Pre-Proposal Conference are considered tentative and non-binding on the Owner. In order to ensure accurate and consistent information, the Owner will, in accordance with the RFP Schedule of Events, mail official published responses to all written questions to each potential Proposer who submits a *Letter of Intent to Propose*. Only these written responses from the Owner will be official.

**End of Section** 

#### 2 RFP SCHEDULE OF EVENTS

The following Schedule of Events represents the Owner's best estimate of the schedule that will be followed. Unless otherwise specified, the time of day for the following events will be between 8:00 a.m. and 4:30 p.m., Central Time.

#### RFP SCHEDULE OF EVENTS

NOTICE: The Owner reserves the right, at its sole discretion, to adjust this schedule as it deems necessary. The Owner will communicate any adjustment to the Schedule of Events to the potential Proposers from whom the Owner has received a Notice of Intent to Propose.

EVENT	TIME	DATE (all dates are State business days)
Owner Issues RFP		Wednesday 5-Dec-2007
2. Disability Accommodation Request Deadline		Monday 10-Dec-2007
3. Pre-proposal Conference	1:30 p.m.	Friday 14-Dec-2007
4. Notice of Intent to Propose Deadline		Thursday 20-Dec-2007
5. Written Comments Deadline		Thursday 3-Jan-2008
6. Owner Responds to Written Comments		Tuesday 15-Jan-2008
7. Proposal Deadline	2:00 p.m.	Tuesday 22-Jan-2008
State Building Commission Review and Approval of Proposer for Contract		Thursday 14-Feb-2008
Owner Issues Evaluation Notice and Opens RFP     Files for Public Inspection		Friday 15-Feb-2008
10. End of Seven Day Protest Period		Friday 22-Feb-2008
11. Contract Signing and Contract Bond Deadline		Friday 29-Feb-2008
12. Estimated Conclusion of Owner Contract Signature Process		Friday 21-Mar-2008
13. Anticipated Contract Start Date		Tuesday 1-Apr-2008

#### 3 PROPOSAL REQUIREMENTS

Each Proposer shall submit a proposal in response to this RFP with the most favorable terms that the Proposer can offer. There will be no best and final offer procedure.

#### 3.1 Proposal Form and Delivery

- 3.1.1 Each response to this RFP shall consist of a Written Proposal and a Cost Proposal.
- 3.1.2 Each Proposer shall submit one (1) original and six (6) copies of the Written Proposal to the Owner in a sealed package that is clearly marked:
  - "Written Proposal in Response to RFP- 529/000-28-2007 -- Do Not Open"
- 3.1.3 Each Proposer must submit one (1) original and one (1) CD copy of the Cost Proposal to the Owner in a separate, sealed package that is clearly marked:
  - "Cost Proposal in Response to RFP- 529/000-28-2007 -- Do Not Open"

The contents of the hardcopies and CD are detailed in RFP Section 3.1.4 below.

3.1.4 The Cost Proposal <u>must</u> be recorded on an exact duplicate of (1) RFP Form 04 12 00, Cost Proposal & Scoring Guide signature page and (2) the Cost Proposal Spreadsheet. The Spreadsheet is found at the following website:

#### http://www.state.tn.us/finance/rpa/rfpad.html

In order to properly submit the Cost Proposal, the Contractor must:

- 1. Enter the Proposer's name, sign, and date a copy of RFP Form 04 12 00, Cost Proposal & Scoring Guide, where indicated, and include the signed copy of this section in its separately sealed Cost Proposal, along with the CD and hard copy printout described below.
- 2. Enter the Proposer's company name at the top of the first page of the Cost Proposal Spreadsheet.
- 3. Complete the entire Cost Proposal Spreadsheet and then print off a hard copy of the completed spreadsheet for inclusion within the sealed Cost Proposal. The Proposer will also make a CD copy of the spreadsheet. The Proposer will then include both the paper and CD copies of the Cost Proposal components within its separately sealed Cost Proposal package.

The Cost Proposal package must contain the following items (as indicated below):

- A. Signed and Dated RFP Form 04 12 00, Cost Proposal & Scoring Guide signature page.
- B. CD containing the electronic version of the completed Cost Proposal Spreadsheet,  $\underline{\text{in}}$  Excel format.
- C. Hardcopy printout of the completed Cost Proposal Spreadsheet. This is a printout of the Excel format spreadsheet described in Item B above, and it must be an exact duplicate of the electronic version.

The State shall use the CD copy of the Cost Proposal Spreadsheet as the official Cost Proposal; It is the Proposer's sole responsibility to ensure that the CD and paper copies are identical. In the event of any differences between printed and electronic versions, or problems with the CD, the contents of the printed Cost Proposal components shall prevail.

3.1.5 If a Proposer encloses the separately sealed proposals (as detailed above) in a larger package for mailing, the Proposer shall clearly mark the outermost package:

"Contains Separately Sealed Written and Cost Proposals for RFP- 529/000-28-2007"

- 3.1.6 Proposal package must include the **Proposal Package Cover Attachment**, Tennessee Contractor License Information. This information must be clearly displayed, affixed to the outside of the outermost container of the submitted Proposal Package.
- 3.1.7 All proposals must be submitted to the RFP Coordinator at the following address by the date and time identified as the Deadline for Submitting a Proposal in the RFP Schedule of Events.

Department of Finance and Administration Real Property Administration Suite 2200 Wm. R. Snodgrass Tennessee Tower 312 8<sup>th</sup> Avenue North Nashville, TN 37243

3.1.8 A Proposer shall not deliver a proposal orally or by any means of electronic transmission.

#### 3.2 Written Proposal

3.2.1 The Proposal and Evaluation Guide details specific requirements for making a Written Proposal in response to this RFP. This guide includes mandatory and general requirements as well as written queries requiring a written response.

NOTICE: No pricing information (except what is specifically requested) shall be included in the Proposal. Inclusion of Cost Proposal amounts in the Proposal will make the proposal non-responsive and the Owner will reject it.

- 3.2.2 Each Proposer shall use the Proposal and Evaluation Guide to organize, reference, and draft the Proposal. Use the Proposal and Evaluation Guide as a table of contents covering the Written Proposal (adding proposal page numbers as appropriate).
- 3.2.3 Proposers shall use the form provided as Related Project History Form to submit example projects for qualifications and experience information.
- 3.2.4 Each proposal shall be economically prepared, with emphasis on completeness and clarity of content. A proposal, as well as any reference material presented, must be written in English and must be written on standard 8 ½" x 11" paper (although foldouts containing charts, spreadsheets, and oversize exhibits are permissible). All proposal pages should be numbered.
- 3.2.4.1 All proposal pages should be numbered and printed double sided. The complete Proposal package should not exceed fifty (50) pages (25 sheets), excluding dividers and résumés.
- 3.2.5 All information included in a Proposal shall be relevant to a specific requirement detailed in the Proposal and Evaluation Guide. All information shall be incorporated into a response to a specific requirement and clearly referenced. Any information not conforming to these criteria will be deemed extraneous and will in no way contribute to the evaluation process.
- 3.2.6 The Owner may determine a proposal to be non-responsive and reject it if the Proposer fails to organize and properly reference the Proposal as required by this RFP and the Proposal and Evaluation Guide.
- 3.2.7 The Owner may determine a proposal to be non-responsive and reject it if the Proposal document fails to appropriately address/meet all of the requirements detailed in the Proposal and Evaluation Guide

#### 3.3 Cost Proposal

- 3.3.1 The Cost Proposal shall be submitted to the Owner in a sealed package separate from the Written Proposal. If a Proposer fails to submit a Cost Proposal as required, the Owner may determine the submitted Proposal as non-responsive and reject it.
- 3.3.2 Each Cost Proposal shall be recorded on exact duplicates of the Cost Proposal and Evaluation Guide, and Cost Proposal Spreadsheet.

- 3.3.3 Each Proposer shall ONLY record the proposed cost exactly as required by the Cost Proposal and Evaluation Guide and shall NOT record any other rates, amounts, or information.
- 3.3.4 The proposed cost shall incorporate all costs for services under the contract for the total contract period.
- 3.3.5 The Proposer shall sign and date the Cost Proposal.

#### 4 PROPOSAL EVALUATION & CONTRACT AWARD

4.1 Each category is weighted as follows, and one thousand (1000) points is the maximum total number of points which may be awarded to a proposal:

#### Written Proposal

### 700 (maximum points possible)

- Mandatory Qualifications
- Qualifications & Experience
- Technical Approach

(pass/fail)

(400 points possible)

(300 points possible)

#### **Cost Proposal**

#### 300 (maximum points possible)

4.1.2 The Contractor Selection will be a two-part process: Written Proposal and Cost Proposal.

<u>Part One:</u> There will be Qualification of all Written Proposals. The Written Proposal must attain a combined score of five hundred thirty **(530)** or above in order for a Proposal to be qualified. The Written Proposal receiving the highest score will be allocated the maximum score of seven hundred **(700)** points. The Written Proposal Score will be used in the following formula to determine the points a Proposer will receive for the Written Proposal.

<u>Written Score for Proposal Being Evaluated</u> x Maximum Points = Written Proposal Points Highest Scoring Written Proposal

<u>Part Two:</u> Cost Proposals will only be considered for those Written Proposals that have achieved qualified status in Part One. The Cost Proposal is divided into two parts: (A) Line Item Evaluation Cost Proposal Score, which is worth 276 points; and (B) Non-Prepriced Item Markup Percentage, which is worth 24 points. Each of these sections will be scored separately using the following formulae:

Cost Part A – Line Item Evaluation Cost Proposal Score

Lowest Line Item Evaluation Cost
Amount from all Proposals

Line Item Evaluation Cost Amount
being evaluated

Amount from all Proposals

x 276

(maximum Part A score)

Proposal Score

Cost Part B - Non-Prepriced Item Markup Percentage Cost Proposal Score

Lowest Non-Prepriced Item Markup
Percentage from <u>all Proposals</u>

Non-Prepriced Item Markup
Percentage being evaluated

x 24 = Part B Cost
Proposal Score

An Aggregate Cost Proposal Score shall be determined by adding the Part A and Part B scores. The Cost Proposal receiving the highest aggregate score will be allocated the maximum score of three hundred **(300)** points.

Scores for Parts One and Two above will be added. The Proposal having the highest combined score identifies the apparent successful Proposer. Refer to the Proposal Score Summary Matrix Format.

#### RFP GENERAL REQUIREMENTS

#### **NONDISCRIMINATION**

- No person shall be excluded from participation in, be denied benefits of, be discriminated against in the admission or access to, or be discriminated against in treatment or employment in the State of Tennessee's contracted programs or activities on the grounds of disability, age, race, color, religion, sex, national origin, or any other classification protected by federal or Tennessee State Constitutional or statutory law; nor shall they be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of contracts with the State of Tennessee or in the employment practices of the State's contractors. Accordingly, all vendors entering into contracts with the State of Tennessee shall, upon request, show proof of such nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.
- **1.2** The Owner has designated the following to coordinate compliance with the nondiscrimination requirements of the State of Tennessee, Title VI of the Civil Rights Act of 1964, the Americans with Disabilities Act of 1990, and applicable federal regulations .

Buddy Lea, Acting Title VI Coordinator Department of Finance and Administration William R. Snodgrass Tennessee Tower, Suite 1200 312 Eighth Avenue North Nashville, Tennessee 37243 Telephone: (615) 741-6049

## ASSISTANCE TO PROPOSERS WITH A DISABILITY

**2.1** A Proposer with a disability may receive accommodation regarding the means of communicating this RFP and participating in this RFP process. A Proposer with a disability should contact the RFP Coordinator to request reasonable accommodation no later than the Disability Accommodation Request Deadline detailed in the RFP Schedule of Events.

#### **RFP COMMUNICATIONS**

- **3.1** Any verbal communications shall be considered unofficial and non-binding with regard to this RFP.
- **3.2** Each Proposer shall assume the risk of the method of dispatching any communication or proposal to the Owner. The Owner assumes no responsibility for delays or delivery failures resulting from the method of dispatch. Actual or electronic "postmarking" of a communication or proposal to the Owner by a deadline date shall not substitute for actual receipt of a communication or proposal by the Owner.
- **3.3.** The RFP Coordinator must receive all written comments, including questions and requests for clarification, no later than the Written Comments Deadline detailed in the RFP Schedule of Events.
- **3.4** The Owner reserves the right to determine, at its sole discretion, the appropriate and adequate responses to written comments, questions, and requests for clarification. The Owner's official responses and other official communications pursuant to this RFP shall constitute an amendment of this RFP.
- **3.5** The Owner will convey all official responses and communications pursuant to this RFP to the potential Proposers from whom the Owner has received a Notice of Intent to Propose.

- **3.6** Only the Owner's official, written responses and communications shall be considered binding with regard to this RFP.
- **3.7** The Owner reserves the right to determine, at its sole discretion, the method of conveying official responses and communications pursuant to this RFP (e.g., written, facsimile, electronic mail, or Internet posting).
- **3.8** Any data or factual information provided by the Owner, in this RFP or an official response or communication, shall be deemed for informational purposes only, and if a Proposer relies on such data or factual information, the Proposer shall either: (1) independently verify the information; or, (2) obtain the Owner's written consent to rely thereon.

## GENERAL RFP CONDITIONS AND CONTRACTING INFORMATION

- 4.1 Waiver of Objections. Each Proposer shall carefully review this RFP and all Attachments, including but not limited to the *pro forma* contract, for comments, questions, defects, objections, or any other matter requiring clarification or correction (collectively called "comments"). Comments concerning RFP objections must be made in writing and received by the Owner no later than the Written Comments Deadline detailed in the RFP Schedule of Events. This will allow issuance of any necessary amendments and help prevent the opening of defective proposals upon which contract award could not be made. Protests based on any objection shall be considered waived and invalid if these comments/objections have not been brought to the attention of the Owner, in writing, by the Written Comments Deadline.
- **4.2 RFP Amendment and Cancellation.** The Owner reserves the unilateral right to amend this RFP in writing at any time. If an RFP amendment is issued, the Owner will convey such amendment to the potential Proposers who submitted a Notice of Intent to Propose. Each proposal must respond to the final written RFP and any exhibits, Attachments, and amendments. The State of Tennessee reserves the right, at its sole discretion, to cancel and reissue this RFP or to cancel this RFP in its entirety in accordance with applicable laws and regulations.

#### 4.3 Proposal Prohibitions and Right of Rejection.

- 4.3.1 The State of Tennessee reserves the right, at its sole discretion, to reject any and all proposals in accordance with applicable laws and regulations.
- 4.3.2 Each proposal must comply with all of the terms of this RFP and all applicable State laws and regulations. The Owner may reject any proposal that does not comply with all of the terms, conditions, and performance requirements of this RFP. The Owner may consider any proposal that does not meet the requirements of this RFP to be non-responsive, and the Owner may reject such a proposal.
- 4.3.3 A proposal of alternate services (i.e., a proposal that offers services different from those requested by this RFP) shall be considered non-responsive and rejected.
- 4.3.4 A Proposer shall not restrict the rights of the Owner or otherwise qualify a proposal. The Owner may determine such a proposal to be a non-responsive counteroffer, and the proposal may be rejected.
- 4.3.5 A Proposer shall not submit the Proposer's own contract terms and conditions in a response to this RFP. If a proposal contains such terms and conditions, the Owner may determine, at its sole discretion, the proposal to be a non-responsive counteroffer, and the proposal may be rejected.

- 4.3.6 A Proposer shall not submit more than one proposal. Submitting more than one proposal shall result in the disqualification of the Proposer.
- 4.3.7 A Proposer shall not submit multiple proposals in different forms. This prohibited action shall be defined as a Proposer submitting one proposal as a prime contractor and permitting a second Proposer to submit another proposal with the first Proposer offered as a subcontractor. This restriction does not prohibit different Proposers from offering the same subcontractor as a part of their proposals, provided that the subcontractor does not also submit a proposal as a prime contractor. Submitting multiple proposals in different forms may result in the disqualification of all Proposers knowingly involved.
- 4.3.8 The Owner will reject a proposal if the Cost Proposal was not arrived at independently without collusion, consultation, communication, or agreement as to any matter relating to such prices with any other Proposer. Regardless of the time of detection, the Owner will consider any of the foregoing prohibited actions to be grounds for proposal rejection or contract termination.
- 4.3.9 The Owner will not contract with or consider a proposal from:
- 4.3.9.1 an individual who is, or within the past six months has been, an employee or official of the State of Tennessee;
- 4.3.9.2 a company, corporation, or any other contracting entity in which an ownership of two percent (2%) or more is held by an individual who is, or within the past six months has been, an employee or official of the State of Tennessee (this shall not apply either to financial interests that have been placed into a "blind trust" arrangement pursuant to which the employee does not have knowledge of the retention or disposition of such interests or to the ownership of publicly traded stocks or bonds where such ownership constitutes less than 2% of the total outstanding amount of the stocks or bonds of the issuing entity);
- 4.3.9.3 a company, corporation, or any other contracting entity which employs an individual who is, or within the past six months has been, an employee or official of the State of Tennessee in a position that would allow the direct or indirect use or disclosure of information, which was obtained through or in connection with his or her employment and not made available to the general public, for the purpose of furthering the private interest or personal profit of any person; or,
- 4.3.9.4 any individual, company, or other entity involved in assisting the Owner in the development, formulation, or drafting of this RFP or its scope of services shall be considered to have been given information that would afford an unfair advantage over other Proposers, and such individual, company, or other entity may not submit a proposal in response to this RFP.
- 4.3.9.5 For the purposes of applying the requirements of RFP subsection 4.3.9, et. seq., an individual shall be deemed an employee or official of the State of Tennessee until such time as all compensation for salary, termination pay, and annual leave has been paid.
- **4.4 Waiver of Variances**. The Owner reserves the right, at its sole discretion, to waive a proposal's variances from full compliance with this RFP. If the Owner waives minor variances in a proposal, such waiver shall not modify the RFP requirements or excuse the Proposer from full compliance with such. Notwithstanding any minor variance, the Owner may hold any Proposer to strict compliance with this RFP.
- **4.5 Incorrect Proposal Information**. If the Owner determines that a Proposer has provided, for consideration in this RFP process or subsequent contract negotiations, incorrect information that the Proposer knew or should have known was materially incorrect, that proposal shall be determined non-responsive and shall be rejected.

#### 4.6 Proposal of Additional Services

- 4.6.1 If a proposal offers services in addition to those required by and described in this RFP, the additional services may be added to the contract before contract signing at the sole discretion of the Owner. Notwithstanding the foregoing, a Proposer shall not propose any additional cost amount(s) or rate(s) for additional services.
- 4.6.2 The Proposer's Cost Proposal shall record only the proposed cost as required in this RFP and shall not record any other rates, amounts, or information.
- 4.6.3 If a Proposer fails to submit a Cost Proposal as required, the Owner will determine the proposal to be non-responsive and shall reject the proposal.

#### 4.7 Assignment and Subcontracting

- 4.7.1 The Proposer awarded a contract pursuant to this RFP shall not subcontract, transfer, or assign any portion of the contract without the Owner's prior, written approval.
- 4.7.2 A subcontractor may only be substituted for a proposed subcontractor at the discretion of the Owner and with the Owner's prior, written approval.
- 4.7.3 At its sole discretion, the Owner reserves the right to refuse approval of any subcontract, transfer, or assignment.
- 4.7.4 Notwithstanding Owner approval of each subcontractor, the Proposer, if awarded a contract pursuant to this RFP, shall be the prime contractor and shall be responsible for all work performed.
- **4.8 Joint Ventures** If the Owner allows consideration of joint venture Proposals, and If a Proposer intends to submit a Proposal as a joint venture, then the following requirements shall apply:
- 4.8.1 For the purposes of this RFP, the Owner recognizes a joint venture as separate organizations or business entities that intend to combine professional or technical expertise and business experience, and to share contractual and project responsibilities in performance of a contract pursuant to this REP
- 4.8.2. Each joint venture participant shall meet the licensure requirements stated in the RFP.
- 4.8.3 Each joint venture participant shall meet the insurance requirements stated in the RFP.
- 4.8.4 Each joint venture participant shall individually provide all documentation required for review of financial responsibility and stability. The Owner will not recognize nor accept as a singular qualification, any combination of financial assets and resources from separate organizations or business entities submitting a Proposal in response to this RFP
- 4.8.5 A sub-contractor to a Proposer is not a joint venture participant.
- **4.9 Right to Refuse Personnel** At its sole discretion, the Owner reserves the right to refuse any personnel, of the prime contractor or a subcontractor, for use in the performance of a contract pursuant to this RFP.
- **4.10 Service Location and Work Space.** Management, performance, completion and delivery of the services pursuant to this RFP are to be as specified in the Pro Forma Contract. Working space on the Owner's premises may be available for contractor use in accordance with the pro forma contract or at the Owner's discretion.
- **4.11 Proposal Withdrawal**. A submitted proposal can be withdrawn at any time up to the Proposal Deadline time and date detailed in the RFP Schedule of Events. To do so, a Proposer shall submit a written request, signed by a Proposer's authorized representative to withdraw a proposal.

After withdrawing a previously submitted proposal, a Proposer is eligible to submit another proposal at any time up to the Proposal Deadline.

- **4.12 Proposal Errors and Amendments.** Each Proposer is liable for all proposal errors or omissions. A Proposer shall not be allowed to alter or amend proposal documents after the Proposal Deadline time and date detailed in the RFP Schedule of Events unless such is formally requested, in writing, by the Owner.
- **4.13 Proposal Preparation Costs.** The Owner will not pay any costs associated with the preparation, submittal, or presentation of any proposal.

#### 4.14 Disclosure of Proposal Contents.

- 4.14.1 Each proposal and all materials submitted to the Owner in response to this RFP shall become the property of the State of Tennessee.
- 4.14.2 Selection or rejection of a proposal does not affect this right. All proposal information, including detailed price and cost information, shall be held in confidence during the evaluation process. Notwithstanding, a list of actual Proposers submitting timely proposals may be available to the public, upon request, directly after technical proposals are opened by the Owner.
- 4.14.3 Upon the completion of the evaluation of proposals, indicated by public release of an Evaluation Notice, the proposals and associated materials shall be open for review by the public in accordance with Tennessee Code Annotated, Section 10-7-504(a)(7).
- 4.14.4 By submitting a proposal, the Proposer acknowledges and accepts that the full proposal contents and associated documents shall become open to public inspection.
- 4.15 Contractor Registration. All service contractors with State of Tennessee contracts must be registered through the Department of Finance and Administration's Service Provider Registry prior to contract approval. However, registration with the State is not required to make a proposal (any unregistered service provider must simply register as required prior to the final contract approval). Refer to the following Internet URL for more information about the Service Provider Registry and to register "on-line."

#### www.state.tn.us/finance/rds/ocr/sprs.html

**4.16 Severability.** If any provision of this RFP is declared by a court to be illegal or in conflict with any law, said decision shall not affect the validity of the remaining RFP terms and provisions, and the rights and obligations of the Owner and Proposers shall be construed and enforced as if the RFP did not contain the particular provision held to be invalid.

#### PROPOSAL EVALUATION

#### 5.1 Evaluation Process.

- 5.1.1 The proposal evaluation process is designed to award the contract to the Qualified Proposal having the highest total score.
- 5.1.2 The RFP Coordinator will use the RFP Technical Proposal and Evaluation Guide to manage the Technical Proposal Evaluation and maintain evaluation records.
- 5.1.3 The RFP Coordinator will review each Technical Proposal to determine compliance with mandatory requirements (refer to RFP Technical Proposal and Evaluation Guide). If the RFP Coordinator determines that a proposal may have failed to meet one or more of the mandatory requirements, the Proposal Evaluation Team will review the proposal and document its determination of whether:
- (1) the proposal meets requirements for further evaluation; (2)

- the Owner will request clarifications or corrections; or, (3) the Owner will determine the proposal non-responsive to the RFP and reject it.
- 5.1.4 A Proposal Evaluation Team, made up of three or more State employees, will evaluate each Technical Proposal that appears responsive to the RFP.
- 5.1.5 Each Proposal Evaluation Team member will evaluate each proposal against the evaluation criteria in this RFP, and will score each in accordance with the RFP Technical Proposal and Evaluation Guide.
- 5.1.6 The Owner reserves the right, at its sole discretion, to request Proposer clarification of a Technical Proposal or to conduct clarification discussions with any or all Proposers. Any such clarification or discussion may be limited to specific sections of the proposal identified by the Owner. The subject Proposer shall submit any resulting clarification in writing as may be required by the Owner. (Also see RFP Cost Proposal section)
- **5.2 Presentations Interviews.** The Owner reserves the right to receive an oral presentation from, or conduct interviews with Proposers. Oral presentations and the number of firms interviewed are at the sole discretion of the Owner. Presentations or interviews will be scheduled by the Owner and included as a component of Technical Proposals.
- **5.3** Cost Proposal Review. After Technical Proposal evaluations are completed, (see Schedule of Events) the RFP Coordinator will open and review the Cost Proposals for each qualified Proposer and use a Cost Proposal Summary and Scoring Guide to calculate and document the Cost Proposal scores.
- 5.3.1 The Owner reserves the right to ascertain the confidence of the cost amount as proposed, and/or the confidence that all work specified under this RFP can be accomplished for the cost amount as proposed without penalty to the Owner of additional cost, project time or quality.
- 5.3.2 If requested by the Owner, the Proposer shall be prepared to present evidence that a submitted Cost Proposal contains no clerical error, miscalculation, nor other mistake, and/or to provide other clarification of proposed costs submitted by the Proposer.
- 5.3.3 Upon notification by the Owner, the Proposer shall respond in writing with clarification details, cost breakdowns, or other specification as stipulated by the Owner. If the Proposer fails to provide such evidence, the Owner, at its own discretion, may determine the Proposal to be non-responsive and reject it.
- 5.3.4 Subsequent to such Cost Proposal review notification by the Owner, the Proposer may elect to withdraw its Proposal due to mistake, and request to withdraw. The request shall be in writing to the RFP Coordinator, delivered in person, by facsimile transmission, by overnight courier service, or by registered mail, postage prepaid. The request shall be made not later than twenty-four hours after the official time of notification by the Owner. Any communication regarding this RFP sent by facsimile transmission must also be sent by United States mail on the same date. The request for withdrawal shall acknowledge that the Proposer refuses to enter into a contract based on the submitted Cost Proposal. Any Proposer making such request shall be removed from consideration, and evaluation proceedings for the Proposal terminated.
- **5.4 Non-Responsive Cost Proposal.** After opening Cost Proposals, should the Owner determine that a Cost Proposal is non-responsive and rejects the Cost Proposal, the RFP Coordinator will re-calculate scores for each responsive Cost Proposal to determine the new, apparent best-evaluated proposal.

- **5.5 Evaluation Notice.** The Owner will issue an Evaluation Notice to identify the apparent best-evaluated proposal on the Evaluation Notice date detailed in the RFP Schedule of Events. The Evaluation Notice shall not create rights, interests, or claims of entitlement in either the Proposer with apparent best-evaluated proposal or any other Proposer. The Owner will also make the RFP files available for public inspection on the Evaluation Notice date detailed in the RFP Schedule of Events.
- **5.6 Closure of Evaluation.** The State Building Commission's action to approve a Proposer as contractor officially closes the evaluation process. Refer to the RFP Schedule of Events.
- **5.7 Protest Process**. The Owner will allow seven (7) calendar days after the State Building Commission's action for consideration of protests from a Proposer. Written protests shall be submitted to the State Architect who will evaluate the merits of the protest. If the State Architect denies a protest, then the contract process proceeds.
- **5.8** Appeal. A Proposer may appeal its denied protest to the State Building Commission for further review. State Building Commission determination of a protest is final action. If the State Building Commission's review through appeal concurs with the State Architect and denies the protest, then the contract process proceeds. If, after review of the protest through appeal, the State Building Commission decides in favor of the protest then the result may be RFP cancellation or other resolution.

### CONTRACT AWARD & APPROVAL PROCESS

- **6.1 Contract Award Process.** The RFP Coordinator will forward the results of the proposal evaluation process to the head of the procuring agency that will consider the proposal evaluation process results and all pertinent information available to make a determination about the contract award. The Owner reserves the right to make an award without further discussion of any proposal.
- **6.2 Contracting Obligations**. The Proposer with the apparent best-evaluated proposal shall agree to and sign a contract with the Owner that shall be substantially the same as the *Pro Forma* Contract. The Owner reserves the right, at its sole discretion, to add terms and conditions or to revise *pro forma* contract requirements in the Owner's best interests subsequent to this RFP process. No such terms and conditions or revision of contract requirements shall materially affect the basis of proposal evaluations or negatively impact the competitive nature of the RFP process.
- **6.3** Contract Signature Deadline. The Proposer with the apparent best-evaluated proposal shall sign and return the contract drawn by the Owner pursuant to this RFP no later than the Contract Signature Deadline date detailed in the RFP Schedule of Events. If the Proposer fails to provide the signed contract by the deadline, the Owner may determine that the Proposer is non-responsive to the terms of this RFP and reject the proposal.

- **6.4 Contract Approval.** The RFP and the contractor selection processes do not obligate the Owner and do not create rights, interests, or claims of entitlement in either the Proposer with the apparent best-evaluated proposal or any other Proposer. Contract award and Owner obligations pursuant thereto shall commence only after the contract is signed by the Contractor and the head of the procuring State agency and after the contract is approved and signed by all other State officials as required by State laws and regulations.
- **6.5 Contract Payments.** All contract payments shall be made in accordance with the contract's Payment Terms and Conditions provisions (refer to RFP Pro Forma Contract). No payment shall be made until the contract is approved as required by State laws and regulations. Under no conditions shall the Owner be liable for payment of any type associated with the contract or responsible for any work done by the Contractor, even work done in good faith and even if the Contractor is orally directed to proceed with the delivery of services, if it occurs before contract approval by State officials as required by applicable statutes and rules of the State of Tennessee or before the contract start date or after the contract end date specified by the contract.
- **6.6 Contractor Performance.** The Contractor shall be responsible for the completion of all work set out in the contract. All work is subject to inspection, evaluation, and acceptance by the Owner. The Owner may employ all reasonable means to ensure that the work is progressing and being performed in compliance with the contract. At reasonable times, the Owner may inspect those areas of the Contractor's place of business that are related to the performance of the contract. If the Owner requires such an inspection, the Contractor shall provide reasonable access and assistance.

#### 6.7 Contract Amendment.

- 6.7.1 During the course of this contract, the Owner may request the Contractor to perform additional work for which the Contractor would be compensated. That work shall be within the general scope of this RFP. In such instances, the Owner will provide the Contractor a written description of the additional work, and the Contractor shall submit a time schedule for accomplishing the additional work and a price for the additional work based on the rates included in the Contractor's proposal to this RFP. If the Owner and the Contractor reach an agreement regarding the work and associated compensation, such agreement shall be effected by means of a contract amendment.
- 6.7.2 Any such amendment requiring additional work must be mutually agreed upon by the parties and signed by the Contractor and the head of the procuring State agency and must be approved by other State officials as required by State laws and regulations.
- 6.7.3 The Contractor shall not commence additional work until the Owner has issued a written contract amendment and secured all required approvals

END OF RFP GENERAL REQUIREMENTS

#### PROPOSAL PACKAGE COVER ATTACHMENT

#### **Premise Wiring Services RFP**

SBC # 529/000-28-2007

#### Tennessee Contractor License Information

#### Any blank spaces may cause Proposal to be unacceptable and rejected.

Provide State contractor license number, expiration date, and classifications for Proposer as applicable and in accordance with State licensing law.

Provide all names as used for licensing or other legal transactions.

Proposer Identification:		
Proposer		
Address		
Tennessee Contractor License information:	Provide complete information if licensed, or circle:	
License Number	(Proposer Unlicensed)	
License Classification(s) applicable to Project		
License expiration date	\$(	

# PROPOSAL TRANSMITTAL AND STATEMENT OF CERTIFICATIONS AND ASSURANCES

The Proposer shall complete and sign this Proposal Transmittal. It must be signed, in the space below, by an individual empowered to bind the proposing entity to the provisions of this RFQ and any contract awarded pursuant to it. If said individual is not the Proposer's chief executive, this document shall attach evidence showing the individual's authority to bind the proposing entity.

PROPO NAME:		R LEGAL ENTITY		
NUMB	ER:	R FEDERAL EMPLOYER IDENTIFICATION Security Number)		
The Pro		er does hereby affirm and expressly declare confirmation, certification, and assurance of the		
1)	Sco	s proposal constitutes a commitment to provide all services as defined in the RFQ <i>Pro Forma</i> Contract ope of Services for the total contract period and confirmation that the Proposer shall comply with all of the visions in this RFQ and shall accept all terms and conditions set out in the RFQ <i>Pro Forma</i> Contract.		
2)	The	e information detailed in the proposal submitted herewith in response to the subject RFQ is accurate.		
3)	The proposal submitted herewith in response to the subject RFQ shall remain valid for at least 120 days subsequent to the date of the Proposal opening and thereafter in accordance with any contract pursuant to the RFQ.			
4)	The	e Proposers shall comply with:		
	a)	the laws of the State of Tennessee;		
	b)	Title VI of the federal Civil Rights Act of 1964;		
	c)	Title IX of the federal Education Amendments Act of 1972;		
	d)	the Equal Employment Opportunity Act and the regulations issued there under by the federal government;		
	e)	the Americans with Disabilities Act of 1990 and the regulations issued there under by the federal government;		
	f)	the condition that the submitted proposal was independently arrived at, without collusion, under penalty of perjury; and,		
	g)	the condition that no amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Proposer in connection with the Procurement under this RFQ.		
5)		e Proposer shall comply with all of the provisions in the subject RFQ and shall accept all terms and iditions set out in the RFQ <i>Pro Forma</i> Contract.		
6)	The	e Proposer shall provide a contract bond in accordance with the requirements of the RFQ.		
SIGNA	TUR	RE &		

DATE:

#### RELATED PROJECT HISTORY FORM

Include project history form with submitted Proposal & Evaluation Guide, Section B, for Qualifications and Experience

Name of Client						
	Procuring A	gency (Federal	I, State, Munic	cipal, Other)		
Firm:						
Address:		City:		_ State:	Phone:	
Client Representative I	knowledgeable ab	out the projec	ct work:			
Name:				Title:		
Phone:	Fax		E-mail: _			
Project Title:						
Project or Contract Num	ber:					
Project Location (City, S	tate)					
Start Date:		Comp	letion Date: _			
Program/ Agency Name:						
Amount of Proposer's C	ontract: \$					
	Brief description	of the project s	scope and ser	vice(s) provide	ed:	
		, , , , , , , , , , , , , , , , , , , ,		(-/		

Attach additional pages as necessary

Use this form for submitting projects of Proposer team participants

#### CLIENT REFERENCE FORM

#### State of Tennessee RFP

<u>Proposers:</u> Please instruct your Referees to open this Microsoft Word<sup>®</sup> form directly from the State website and save to their computer, or provide them this form as a Microsoft Word<sup>®</sup> 2003 file electronically. http://www.state.tn.us/finance/rpa/rfpad.html

Reference forms are due not later than the Proposal Deadline Date.
This Microsoft Word® file is provided for convenience. The form is designed to be used on a computer.
The response fields expand as text is entered.

<u>Referee</u>: Please record your responses in the fields that are provided. The fields automatically expand as needed. Mail or Email your completed reference form to the RFP Coordinator. Include a letter of transmittal on company letterhead with your signature.

Address to:

Lorraine Walla, RFP Coordinator Division of Real Property Administration Suite 2200 William R. Snodgrass Tennessee Tower 312 Eighth Avenue North Nashville, Tennessee 37243-0299

Nashville, Tennessee 37243-0299 Email: Lorraine.Walla@state.tn.us

Proposer:					
Referenced Project:					
Referee Company Name:					
Referee Name:					
Position Title:					
Telephone Number:					
Email Address:					
Date Reference Completed:					
Describe the work/service	ces that the Proposer's company did for you.				
What was the time period (approximately) in which the services were provided?					
What is your overall opinion of the Proposer and the Proposer's staff?					
	n or dissatisfaction with the workmanship, technical abilities, erpersonal skills of the project managers and on-site technicians.				

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# Proposal & Evaluation Guide Forms Premise Cabling Services RFP Sections A through C

#### PROPOSAL & EVALUATION GUIDE — SECTION A

PROPOSER NAME:
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#### SECTION A — MANDATORY REQUIREMENTS

The Proposer shall address ALL Mandatory Requirements section items and provide, in sequence, the information and documentation as required (referenced with the associated item references). The RFP Coordinator will review all mandatory requirements, including but not limited to the following:

- Proposal received on or before the Proposal Deadline.
- Proposal copies and Cost Proposal packaged separately.
- Proposal contains NO cost data.
- Proposer did NOT submit alternate proposals.
- Proposer did NOT submit multiple proposals in a different form.
- Proposal does NOT contain any restrictions of the rights of the Owner or other qualification of the proposal.

The RFP Coordinator will also review the proposal to determine if the Mandatory Requirement Items (below) are met and mark each with pass or fail. For each requirement that is not met, the Proposal Evaluation Team must review the proposal and attach a written determination.

NOTICE: In addition to these requirements, the Owner will also evaluate compliance with ALL RFP requirements.

Proposal Page #			Owner Use ONLY
(completed by Proposer)		Mandatory Requirement Items	Pass/Fail
	A.1	Provide the Proposal Transmittal and Statement of Certifications and Assurances completed and signed, in the space provided, by an individual empowered to bind the Proposer to the provisions of this RFP and any resulting contract.	
	A.2	Describe the Proposer's form of business (i.e., individual, sole proprietor, corporation, non-profit corporation, partnership, limited liability company) and detail the name, mailing address, telephone number, and e-mail address of the person the Owner should contact regarding the proposal.	
	A.3	Provide a statement on the Proposer's experience at providing the services specified in this RFP. A Proposer, to be considered, must have a minimum of five (5) years of experience in providing these services. If a Proposer is a joint venture firm, at least one joint venture party must have a minimum of five (5) years of said experience and other joint venture party or parties must have a minimum of three (3) years of said experience. If a joint venture, provide a history of this joint venture relationship.	
	A.4	Describe the Proposer organization's number of employees, type of client base, and location of offices.	
	A.5	Insurance and Bonding: Provide a certificate or letter from an insurance/surety agency stating the Proposer's capability to provide insurance and bonding for this Project.	

A.6	Provide annual dollar workload volume for services the same as, or similar to, the services requested in this RFP, on a per year basis for the last five (5) years.	
A.7	Provide the following ratios for the Proposer covering the last three (3) years, calculated according to the generally accepted accounting principles:  1) Quick Ratio and 2) Debt / Worth. The Owner may request CPA audited or reviewed financial statements prepared in accordance with generally accepted accounting principles from the apparent best-evaluated Proposer prior to the final award of the contract. If the requested documents do not support the financial stability of the Proposer the Owner reserves the right to reject the proposal.	
A.8	Provide a statement of whether the Proposer or any individual who shall perform work under the contract has a possible conflict of interest (e.g., employment by the State of Tennessee) and, if so, the nature of that conflict.	
A.9	Provide a statement of whether there have been any mergers, acquisitions, or sales of the Proposer company within the last five (5) years, and if so, an explanation providing relevant details.	
A.10	Provide a statement of whether the Proposer or any of the Proposer's employees, have been convicted of, pled guilty to, or pled <i>nolo contendere</i> to any felony, and if so, an explanation providing relevant details.	
A.11	Provide a statement of whether there is any pending litigation against the Proposer; and if such litigation exists, an attached opinion of counsel as to whether the pending litigation will impair the Proposer's performance in a contract under this RFP.	
A.12	Provide a statement of whether, in the last ten (10) years, the Proposer has filed (or had filed against it) any bankruptcy or insolvency proceeding, whether voluntary or involuntary, or undergone the appointment of a receiver, trustee, or assignee for the benefit of creditors, and if so, an explanation providing relevant details.	
A.13	Provide a statement confirming that the following is true: the Proposer has, as of the date of Proposal Deadline, or will have, within ninety (90) calendar days after the Proposal Deadline, an office staffed in each of the following regions: East Tennessee, West Tennessee, and Nashville. This office will be operated by the Prime Contractor, not a sub-contractor. In addition, each of these offices will have internet access.	

#### **End of Section A**

# Premise Cabling Services RFP PROPOSAL & EVALUATION GUIDE — SECTION B

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#### **SECTION B — QUALIFICATIONS & EXPERIENCE**

The Proposer shall address ALL Qualifications and Experience section items and provide, in sequence, the information and documentation as required (referenced with the associated item references).

A Proposal Evaluation Team, made up of three or more State employees, will independently evaluate and score the proposal's "Qualifications and Experience" responses.

Information previously provided and shown in the Section A, Mandatory Requirement Items, will be included in the evaluation and scoring of these Qualification & Experience Items.

Proposal					
Page # (completed by Proposer)		Qualifications & Experience Items	Owner's Use ONLY		
	B.1	Provide a brief, descriptive statement indicating the Proposer's credentials to deliver the services sought under this RFP.			
	B.2	Provide the following information:			
		<ul> <li>Describe what amount or percentage of the Proposer's business is dedicated to telecommunications activities, as compared to other types of business engaged in by the company.</li> </ul>			
		<ul> <li>State the length of time the Proposer has been performing services specifically required by this RFP.</li> </ul>			
	B.3	Provide the following information for the Proposer-chosen manufacturer of the certified solution:			
		a. Written confirmation from an independent testing entity that the end to end solution proposed is cat 6 compliant and provides additional headroom (including, but not limited to, bandwidth and frequency) for the <u>premium</u> solution.			
		<ul> <li>Written confirmation from an independent testing entity that the end to end solution proposed is cat 6 compliant for the <u>nominal</u> solution.</li> </ul>			
		<ul> <li>Number of years with specified manufacturer product certification. If not currently certified, describe plans for obtaining certification.</li> </ul>			
	B.4	Provide the following information:			
		a. A summary description of a minimum of three example projects of varying size, scope and complexity that are under construction, or have been completed or substantially completed utilizing the services of the Proposer within the last seven (7) years. The information for each project shall include specific details on the extent of services provided by this Proposer. A Related Project History Form is provided for the Proposer's use in compiling and presenting this information.			
		b. Arrange for written references to be sent directly to the RFP Coordinator by the referee. Provided references shall report on current or recently completed projects. A Client Reference Form is provided for your referee's use in compiling and presenting their information. The Owner reserves the right to contact references as well as any other source available.			
	B.5	Briefly describe the Proposer's experience in managing multiple projects simultaneously, especially sites distributed over a diverse area.			

#### **B.6** Provide the following information: a. A list of current projects on which your firm is presently committed, and both the dollar volume and time frame for each, and what services are being provided. b. A list of all current contracts with the State of Tennessee, and all State of Tennessee contracts completed within the previous five (5) year period. **B.7** Provide the following personnel experience information: a. Résumés of key personnel who shall be assigned by the Proposer to perform duties or services under the Contract. The résumés shall detail each individual's title, education, current position with the Proposer, and employment history. On the page opposite to the résumé of each individual, please show the Proposer's corporate organizational chart for work with this Contract, illustrating lines of authority and where this person is positioned. Such personnel shall include, but not be limited to: the project manager, senior project engineer(s), field representative(s), and other key personnel who may be required. A project executive or principal-in-charge (by whatever name called) must also be named as key personnel, but who may not be exclusively assigned to this Project. b. Provide a reference (an owner representative) from each of the last three projects that the proposed project manager and the senior engineer(s) were assigned. Provide a contact name, address, telephone number, email address, and project name and location for each reference. The Owner reserves the right to contact references given as well as any other source available. **B.8 Diversity Information:** It is the policy of the State of Tennessee to include diversity in its contractual relations with commercial firms. Proposers that presently demonstrate and embrace diversity within their programs and policies are assisting the Owner achieve its goals in building a marketplace more reflective of the community within this State. B.8.1 Though strongly encouraged, participation in diversity is neither obligatory nor a condition or pre-qualification for submitting a Proposal. However, Proposers shall provide descriptions and information of their present participation in diversity through: 1) business strategy, 2) business relationships, and 3) workforce. (Note: Business relationships include but are not limited to partnering, subcontracting, contracts with materials and equipment suppliers, and special technical or professional services the Proposer procures in order to satisfy contractual obligations.) B.8.2 Diversity Documentation shall detail: A description of the Proposer's existing programs and procedures designed to encourage and foster commerce with business enterprises owned by minorities, women, persons with a disability, and small business enterprises, both on past and current contracts awarded. A listing of Proposer's current contracts with business enterprises owned by women, persons with a disability, minorities, and small business enterprises firms, including: Contract description and total value; 1)

Relevant ownership characteristics (i.e., ethnicity, sex, disability);

In a contract awarded to the Proposer pursuant to this RFP, an estimate of the level of participation of business enterprises owned by small business firms, persons with a disability, women, and minorities,

Contact person and telephone number.

including the following information:

2)

- Participation estimate (expressed as a percent of the total contract value that will be dedicated to business with anticipated subcontractors, anticipated supply contractors, or other anticipated technical or professional business relationship having such ownership characteristics),
- The percent of the Proposer's current employees by ethnicity, sex, and disability.

(Note: Proposal evaluation will recognize the positive qualifications and experience of Proposers utilizing small businesses, women-owned businesses, minority-owned businesses, and businesses owned by persons with a disability, as well as a diverse workforce, in their Proposal to meet the Owner's service needs.)

B.8.3 Governor's Office of Diversity Business Enterprise
Notwithstanding the foregoing, interested parties may contact the staff of the
Governor's Office of Diversity Business Enterprise for general, public
information regarding assistance available from the Governor's Office of
Diversity Business Enterprise, information on registration, on current qualified
businesses, or potential future procurements.

Web Site: http://www.tennessee.gov/businessopp/

This website also contains Vendor Registration information and forms. Contact the office in Nashville, Tennessee at (615)253-4657; Toll Free 1-866-894-5026

Richard.VanNorman@state.tn.us or Shelia.J.Simpson@state.tn.us

(Maximum Section B Score = 400)

SCORE (for all Section B items above, B.1 through B.8):

**End of Section B** 

# Premise Cabling Services RFP PROPOSAL & EVALUATION GUIDE — SECTION C

		<del>_</del>			
PROPOSER NAME:					
SECTION C -	- TECHN	IICAL APPROACH			
documentation a	The Proposer shall address ALL Technical Approach section items and provide, in sequence, the information and documentation as required (referenced with the associated item references). A Proposal Evaluation Team, made up of three or more State employees, will independently evaluate and score the proposal's response to each item.				
Proposal Page # (completed by Proposer)		Technical Approach Items	Owner's Use ONLY		
	C.1	Provide a descriptive narrative statement indicating the Proposer's approach to delivering the services sought under the RFP for the work requested.			
	C.2	Provide a comprehensive narrative, captioned "Project Understanding," that illustrates the vendor's understanding of the State's requirements and project schedule. Proposer will acknowledge the following response times during normal working hours for Trouble Tickets ( averaged 130 / month for last 12 months):  a. Emergency response timeframe in Memphis, Nashville, and Knoxville: 2 hours.  b. Emergency response timeframe in all other areas of the State: 4 hours c. Routine response timeframe: 8 hours entire State  Emergency equates to a Priority-1 trouble ticket logged with the OIR Telecommunications Help desk. Routine equates to a Priority-2 or Priority-3 trouble ticket.  Provide a narrative describing the Proposer's Project Management, the			
	0.5	process in which a proposed staff and administrative support would manage the execution of the work.  The Project Management program shall contain functions that interface the various aspects of prudent project management, such as, but not limited to Communications, Meetings, Reporting, Field Supervision, Progress Billings, Owner Liaison and Response Plan.			
	C.4	Provide a comprehensive narrative, captioned "Project Staffing Plan," that illustrates how the Proposer will staff. This Plan shall include proposed project management team and support staffing. The Plan shall include:  a. Identity of the Proposer's project management team. Proposer's staffing for this Contract shall be indicative of their ability to provide professional management, design expertise, and field administration that is effective, efficient, and thorough. These individuals cannot be substituted without written approval of the Owner.  b. Provide the amount of time (in percentage or hours for positions) that each of the key personnel presented in Section B above will be committed to this Contract.			
		(Maximum Section C Score = 300)			

**End of Section C** 

SCORE (for all Section C items above, C.1 through C.4):

#### COST PROPOSAL FORMAT

#### **Premise Cabling Services RFP**

SBC No. 529/000-28-2007

	COST PROPOSAL & SCORING GUIDE					
NOTICE TO PROPOSER: This Cost Proposal MUST be completed EXACTLY as required						
PROPOSER NAME:						

#### **COST PROPOSAL SPREADSHEET**

This RFP includes, as a separate instrument, an Excel® spreadsheet entitled "SBC No. 529/000/28-2007 – Cost Proposal Spreadsheet" (the "Cost Proposal Spreadsheet"). The Proposer will use this document to record its proposed costs. A copy of the Cost Proposal Spreadsheet may be downloaded at the following site:

#### http://www.state.tn.us/finance/rpa/rfpad.html

The proposed cost, detailed in the Cost Proposal Spreadsheet, shall indicate the proposed price for providing the entire scope of service including all services as defined in RFP Form 06 12 01, *Pro Forma Master Contract* Scope of Services for the total contract period. The proposed cost and the submitted technical proposal associated with this cost shall remain valid for at least 180 days subsequent to the date of the Cost Proposal opening and thereafter in accordance with any resulting contract between the Proposer and the State. All monetary amounts are United States currency.

This Cost Proposal must specifically record the exact cost amount(s) proposed in the appropriate space(s) as required in the Cost Proposal Spreadsheet. Said Cost Proposed must incorporate all cost for the proposed scope of services for the total contract period.

The Cost Proposal shall detail only the cost proposed as required, and shall not detail any other rates, amounts, or information. It shall not detail any text that could be construed as a qualification of the cost proposed. If the Proposer fails to specify the Cost Proposal as required, the State shall determine the proposal to be nonresponsive and reject it.

#### **Cost Proposal Spreadsheet Sections**

There are two sections on the Cost Proposal Spreadsheet into which the Proposer must enter costs: (A) Line Item Rates and (B) Non-Prepriced Item Markup Percentage. The Line Item Rates are entered as rates into a table with multiple line items. The Spreadsheet will then automatically calculate the Line Item Evaluation Cost Amount. For the Non-Prepriced Item Markup Percentage, the Proposer will enter a single percentage markup amount into the cell provided for that purpose at the bottom of the Spreadsheet. The Proposer must enter all Line Item Rates and the Markup Percentage. Failure to enter all Line Item Rates and a Markup Percentage shall result in the disqualification of the Proposal. Instructions for each Spreadsheet section are as follows:

#### Part A - Line Item Rates

The Cost Proposal cells for each of the three (3) years are formatted to round and display two (2) places to the right of the decimal point. While the spreadsheet will allow it, The Proposer should NOT enter more than two (2) digits to the right of the decimal point; i.e. .99. In the event that a Proposer does enter more than two digits to the right of the decimal point, the State will refer to the hard copy of the Cost Proposal Spreadsheet, which must be included in the Proposer's Cost Proposal. The State will truncate the number entered in the electronic spreadsheet to match the number that Excel produced on the hardcopy according to the standard Excel rounding rules. For example, .555 would be rounded and truncated to .56; .554 would become .55. After the completion of any necessary rounding and truncations, the electronic spreadsheet will be recalculated accordingly, and the resulting evaluation cost amount will be used in the Cost Proposal score calculation.

After the State has made an award under this RFP, during the Contract approval process, the State will transcribe the proposed costs from the Cost Proposal Spreadsheet to *Pro Forma Master Contract*, Premise Cabling Catalog of Services.

The "Weight" amounts contained in the *Cost Proposal Spreadsheet* are for evaluation purposes only and are based on the estimated usage of each line item over the initial three-year contract term. These usage amounts are in no way binding upon the State and do not commit the State to purchase services from the Proposer in any particular quantities, or to purchase any services at all.

#### Part B - Non-Prepriced Item Markup Percentage

The Proposer must enter a markup percentage to be used to calculate the price for items that were not included in the Line Item Rates originally proposed. This markup percentage must be entered in the following format: 999.99. For example, if the Proposer wants to propose a markup percentage of 4.44 percent, the Proposer will enter 4.44 where indicated on the Cost Proposal Spreadsheet; a 100 percent markup would be entered as 100.00. Do not enter more than two digits to the right of the decimal point. If the Proposer does enter more than two digits to the right of the decimal point, the State will truncate the number in the manner described in Part A above.

#### **Cost Proposal Spreadsheet General Instructions/Requirements**

IMPORTANT NOTE: DO NOT MODIFY, ADD TO, MAKE NOTES CONCERNING, OR OTHERWISE QUALIFY IN ANY WAY THE COST PROPOSAL SPREADSHEET OR THE ITEMS LISTED THEREIN. WITH THE EXCEPTION OF PROPOSER IDENTIFICATION INFORMATION, PROPOSED COSTS, AND THE MARKUP PERCENTAGE, THE COST PROPOSAL SPREADSHEET MUST REMAIN EXACTLY AS PUBLISHED ON THE STATE'S WEBSITE.

If the Proposer fails to detail all cost information for the services proposed as required, the State shall determine the proposal to be non-responsive and reject it.

The costs and markup percentage must be entered directly into the Excel spreadsheet and the spreadsheet submitted to the State in accordance with the following instructions:

- 1. First, the Proposer will enter the Proposer's company name where indicated at the top of the first page of the Cost Proposal Spreadsheet.
- 2. To fill out the spreadsheet, the Proposer must propose a Unit price, under the "Proposed Cost" column, for each year, for each line item listed in the spreadsheet, in the units requested. The Proposer must respond to every cell within every row in the Cost Proposal Spreadsheet. Unit prices must be proposed in standard currency format, with no more than two digits to the right of the decimal point. In addition the Proposer must enter a Non-Prepriced Item Markup Percentage in the appropriate cell. All other spreadsheet cells, with the exception of the Proposer name, are password protected and cannot be changed.

The Proposer may propose a cost or percentage of zero; however, the Proposer should not leave any Cost Proposal cell blank. For evaluation and contractual purposes, the State shall interpret a blank Cost Proposal cell as a zero (0).

The Proposer <u>must not</u> enter a <u>range</u> of costs in any Cost Proposal cell, or enter any words or other nonnumeric characters; if the Proposer does so, the State shall deem the Proposer's Cost Proposal nonresponsive and the entire Proposal shall be disqualified.

3. The Proposer will Submit the Cost Proposal, including the signature page contained herein and the completed Cost Proposal Spreadsheet, in accordance with the instructions given in RFP Sections 3.1.3 and 3.1.4.

#### COST PROPOSAL SIGNATURE

The Proposer must sign and date the Cost Proposal, in the area provided for this purpose below:

I hereby affirm that the enclosed CD contains the official copy of my Cost Proposal in response to the RFP- 529/000-28-2007. If the enclosed CD is unreadable, I authorize the State to devolve to the enclosed paper copy as the official copy. I also affirm that the CD and paper copies of the Cost Proposal Spreadsheet are identical. The proposed cost and the submitted technical proposal associated with this cost shall remain valid for at least one hundred and eighty (180) days subsequent to the date of the Cost Proposal opening and thereafter in accordance with any resulting contract between the Proposer and the State.

SIGNATURE & DATE:

NOTE: The signatory must be an individual or a company officer empowered to contractually bind the Proposer. If the Signatory is not the Proposer company president, this Statement of Certifications and Assurances SHALL attach evidence showing the Signatory's authority to bind the Proposer.

End of Cost Proposal

## **RFP**

#### PROPOSAL SCORE SUMMARY MATRIX FORMAT

	Exp	alific perie	nce		ts		Technical Maximum 300 Points						Q&E+T			
Evaluator	1	2	3	4	5	Median	1	2	3	4	5	Median	Total Q&E+T	Normalized Q&E+T	Normalized Cost Score	Total
Proposer																
Proposer A																
Proposer B																
Proposer C																
Proposer D																
Proposer E															_	_
Proposer F																

The Median of the scores of all evaluators for the Q&E+T will be totaled and then the scores will be normalized to give the highest Proposer score a value of 700 points. The formula is:

	Proposers Median Score Total Q&E+T	X	700 Points
	Highest Median Score Total Q&E+T		700 Folitis
	ggregate Cost score from the Cost Proposal was a value of 300 points. The formula is:	vill be norn	nalized to give the highest Proposer Cost
	Proposers Aggregate Cost Score	X	300 Points
	Highest Aggregate Cost Score	Α	Soo I Sinto
	ighest Total Score will be determined to be the ements of this RFP.	e apparent	best-evaluated Proposer, subject to the
RFP Co	pordinator		Date

#### PREMISE CABLING RFP

#### **PRO FORMA CONTRACT**

The pro forma contract detailed in this sample contains some "blanks" (signified by descriptions in capital letters) that will be completed with appropriate information in the final contract resulting from this RFP.

# CONTRACT BETWEEN THE STATE OF TENNESSEE, DEPARTMENT OF FINANCE AND ADMINISTRATION AND [CONTRACTOR NAME]

This Contract, by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and [CONTRACTOR LEGAL ENTITY NAME], hereinafter referred to as the "Contractor," is for the provision of premise cabling services, equipment installation, and configuration as further defined in the "SCOPE OF SERVICES."

The Contractor is [AN INDIVIDUAL / A FOR-PROFIT CORPORATION / A NONPROFIT CORPORATION / A SPECIAL PURPOSE CORPORATION OR ASSOCIATION / A FRATERNAL OR PATRIOTIC ORGANIZATION / A PARTNERSHIP / A JOINT VENTURE / A LIMITED LIABILITY COMPANY]. The Contractor's address is:

[ADDRESS]

The Contractor's place of incorporation or organization is [STATE OF ORGANIZATION].

#### A. <u>SCOPE OF SERVICES</u>:

- A.1 **Contractor Services:** The State requires a source of supply for the following services. These services define premise cabling services, equipment installation, and configuration for the purposes of this Contract. A specific project might utilize any possible combination of these services depending upon the requirements of that project.
  - A.1.a Provide statewide premise cabling services to the state, such installation, trouble shooting, and maintenance of building and campus cabling systems as well as equipment installation including but not limited to telephones, data cabinet, hardware and wireless devices.
  - A.1.b Evaluate and recommend the optimum solution for each application. Providing the state analyst with all on-site scenarios. Both of these services shall be at no additional charge to the state.
  - A.1.c Provide general project management resources incidental to the provision of the Cabling Services, during all phases of a project, at no additional cost to the State. If the State requests project management services, utilizing a project management methodology that shall provide documentation such as, but not limited to, Gantt charts, PERT charts, status reports, and resource allocations, the Contractor may bill the State for such services at the rates stipulated in Premise Cabling and Equipment Catalog of Services.
  - A.1.d Provide all documentation for each project in electronic form, including but not limited to auto-cad for as-builts, proprietary software necessary for evaluation of infrastructure test results and system maintenance. All testing shall be offered to the state for witnessing, if the state is unable to witness then the contractor shall certify by endorsement passing test completion.
  - A.1.e Contractor shall refer to the State Premise Cabling Standards, as they are amended from time to time, for best practice methodologies and state specific details while always maintaining strict adherence to the AHJ, and applicable standard and codes body designated for the particular install. Including but not limited to the latest revision of technical standards for premise cabling and associated standards as issued by the TIA/EIA, BICSI, IEEE, NEC, NEMA, ANSI, ISO, NFPA and solution manufacturer certification criteria. See also Contract Section A.2.b.

- A.1.f Develop an overall quality assurance plan, to be approved by the State, as part of the project management planning and maintain the plan throughout the project. This shall be provided at no additional charge to the state. The plan shall include:
  - Objectives for the quality of the project's results.
  - Identification and definition of the processes critical to meeting the objectives.
  - Definition of the methodology and criteria to evaluate the processes and their effectiveness in meeting the objectives.
  - Documentation of the objectives, processes, methodologies, criteria, and their relationships in a project quality assurance plan.
- A.1.g Provide and maintain a quality assurance plan throughout each project, as improvements in project work processes are identified and implemented. The Contractor shall assure that project work products are complete, accurate, and free of technical defects. The Contractor shall take steps to prevent the re-occurrence of any identified defects in work products.
- A.1.h Verify that work products accurately and completely represent the information used in their creation and that they conform to applicable State standards.
- A.1.i Certify to the State that deliverables for each project have passed the Contractor's quality controls when submitting them to the State for acceptance.
- A.1.j Contractor shall provide 2 TIA/EIA certified cat 6 compliant end-to-end solutions. Each being independently (independently being defined as a testing body exterior to the contractor or manufacturer) certified. One shall be of premium (premium being defined as having guaranteed bandwidth and frequency above minimally compliant cat 6 solutions) selection but both of the same manufacturer. The other solution shall be of nominal cat 6 compliance. Once the solutions have been accepted by the state and the contract has been let the contractor shall use those solutions until termination of the contract
- A.1.k Contractor shall provide the following response times during normal working hours for Trouble Tickets (averaged 130 per month for last 12 months):
  - a. Emergency response timeframe in Memphis, Nashville, and Knoxville: 2 hours.
  - b. Emergency response timeframe in all other areas of the State: 4 hours
  - c. Routine response timeframe: 8 hours entire State
- A.1.I Emergency equates to a Priority-1 trouble ticket logged with the OIR Telecommunications Help desk. Routine equates to a Priority-2 or Priority-3 trouble ticket. Note these time frames may fluctuate as business needs dictate.
- A.1.m Participate with the State on Quality Assurance Assessments. Participation includes:
  - Maintaining project quality records, including methodology, as specified in the quality assurance plan, and providing these to State as requested by the State.
  - Making other relevant Contractor-maintained project records available to State as requested by the State.
  - Making Contractor project staff available for interviews with State assessors.
  - Participating in meetings as required and scheduled by the State.
  - Taking agreed-upon actions identified as Contractor responsibilities for quality assurance.
- A.1.n Provide personnel for up to fifty (50) projects of varying size and scope concurrently in the State of Tennessee. Each project may have different task requirements.
- A.1.0 Provide expertise as well as deliverables for in the following areas:
  - Project Manager management of premise cabling projects of all levels of complexity. Overall
    responsibility for coordination of contractor activities to ensure successful on-time completion of all
    state projects to the established standards, coordination with other on site contractors for scheduling
    and installation space
  - 2) System Designer / RCDD The primary responsibility for the technical aspects of the Contract. Must be a current BICSI certified RCDD (Registered Communications Distribution Designer), familiar in all aspects of any telecommunication cabling need for a structured premise cabling solution.

Answers to Contractor's CEO to ensure overall quality of work performed on State projects is to established standards. All project personnel, including the project managers, are monitored by this person. Contract familiarity and working knowledge of the BICSI, TIA/EIA, IEEE, NEC, and any other standards deployed is required.

- 3) Technician (Copper Cable) Technical specialist with knowledge and work skills for installing primarily copper twisted pair to the standards being implemented. Secondary knowledge and skills in other media is required. All copper techs shall be certified with the manufacturer of the end to end CAT6 solution chosen as the state standard for installation. 60% of the techs shall be also be BICSI certified. The contractor shall have 120 days from contract inception to meet the BICSI certification requirement. Documentation shall be presented at 3 month intervals for the duration of the contract showing this requirement is being met.
- 4) Technician (Fiber Optic Cable) Technical specialist with knowledge and working skills for installing, terminating and splicing(fusion) fiber optic cabling, both single mode and different levels of multi mode to the implemented standards.
- 5) **As-Built Documenter** responsible for creation of up to date as-builts (in Auto-CAD or another vector diagram program providing that the State has pre-approved in writing the use of the alternative program) per project and cable management records for new installations and modify existing records for moves, adds, and changes from field information gathered by installation technicians.
- 6) **Draftsperson CAD / AutoCAD Required.**
- 7) Labor The Laborer shall provide general telecommunications labor services.
- 8) **Traffic Control** The Contractor shall be required to provide traffic control services, as by rules established by Authority Having Jurisdiction (AHJ).
- A.2 **Installation Item Requirements**: The items listed in Premise Cabling and Equipment Catalog of Services, represent the installation items that shall be required during this Contract, pending any new items added in accordance with Section E.14, new item list.
  - A.2.a The Contractor shall follow the latest technical standards for premise cabling systems and associated practices as issued by the FCC, TIA/EIA, BICSI, IEEE, NEC, NEMA, UL, ANSI, ISO, NCTA, NFPA, and NTSC. All installations shall follow BICSI/manufacturer certification standards. Should there be a conflict, BICSI TDMM standards shall be used.
  - A.2.b The Contractor shall follow the State Premise Cabling Standards for all telecommunications installations within State facilities.
    - State Premise Cabling Standards are updated from time to time in response to changes in technology, terminology, or other amendment deemed necessary by the State. Vendors, Contractors, and Installers are responsible to confirm the edition of State Premise Cabling Standards currently authorized by the State Office for Information Resources (OIR) prior to advancing any telecommunications project.
  - A.2.c The Contractor shall provide a minimum twenty-year warranty for new installation and/or extensions to existing installations. This warranty shall be backed by the contractor chosen state approved certifying manufacturer and its Business Partners. This warranty shall be backed by the Contractor and must include a provision whereby the manufacturer through another certified contractor shall repair or replace, at its discretion, any component found defective during the warranty period, at no cost to the State.
  - A.2.d The Contractor shall provide as-built documentation after acceptance by the State within thirty (30) days of completion. Minimum documentation includes:
    - Complete floor plans with cable numbering to each workstation location and cable runs
    - Frame/rack layout with cable numbering
    - OSP plans and drawings
    - Complete test documentation for all testing per TIA/EIA standards
    - Any other documentation required in the statement of work
    - Soft (electronic) copy and associated program for ability to view
  - A.2.e Delivery of equipment and materials to job sites and storage of the equipment and materials is the sole responsibility of the Contractor. Storage space may be available; however, until acceptance and transfer of title, all risk of loss remains with the Contractor.

- A.2.f Only new materials or approved materials shall be acceptable. Major materials not available through the manufacturer catalogs shall be State approved. Minor incidental hardware and the like are considered part of any installation and shall be Contractor supplied.
- A.2.g Hand printed or written identification labels shall not be accepted. Labeling instructions are contained in the State Premise Cabling Standards.
- A.2.h The Contractor, at no additional cost to the State, shall correct any violations of local, municipal, State, or federal codes governing the installation of telecommunications premise cabling systems.
- A.2.i Workmanship and aesthetics shall be just as important as the electrical and mechanical integrity of any installation. Any installation deemed by the State to be deficient in neatness, appearance, or conforming to good workmanship, shall be corrected by the Contractor at no additional cost to the State.
- A.2.j All station related cables, wires, and equipment shall be firmly held in place. Fastenings and supports shall be adequate to support loads with ample safety factors. It is unacceptable for cables and wires to be laying on ceiling tiles or other objects that are not part of the Premise Cabling System. This hardware is also provided as part of the installed price.
- A.2.k The Contractor shall use only approved Category compliant fittings and products, as specified by the manufacturer.
- A.2.I The Contractor shall notify the State of any unexpected or unsafe installation situations for direction before proceeding.
- A.2.m Field assembled patch cords are not acceptable for new, upgraded, or changed cabling situations. Factory manufactured and certified patch cords shall always be used except as a temporary measure in emergencies to restore disrupted service.
- A.2.n Contractor shall not bill for travel time for technicians to and from sites unless the contractor has called ahead and scheduled an arrival time with the pre-determined site contact and the contractor once on site was turned away by the site contact. There is a one time billable amount for this trip cancellation on the item list, line item 8001 and 8002.
- A.2.o Contractor shall perform moves, additions, changes, trouble shoot and over all maintain, installed embedded cable base. Where applicable Contractor shall be able to add new contract certified cat 6 end to end solution. Contractor shall provide installation warranty for all work.

#### A.3 Contractor Licensure and Work Procedures

- A.3.a The Contractor is responsible for all licenses, certifications, permits, etc. required for completion of the work as required by this Contract.
- A.3.b Tennessee Contractor license is required. The following contractor license classifications are considered acceptable: E; E-D; E-F; E-G; E-J; CE; CE-D; CE-F; CE-G; CE-J; S-Telecommunications; S-Fiberoptic; or S-Low Voltage Computer Cabling. These classifications are outlined in Rule 0680-1-.16 under Electrical Contracting and under Specialty.
- A.3.c The Contractor shall replace or restore (at least to the original condition) any damage to floor, ceiling, walls, furniture, landscape, etc. caused by its personnel and/or operations, at the Contractor's expense.
- A.3.d During site installation/construction, the Contractor shall maintain a clean and safe working environment for not only Contractor staff, but also State workers and the public.
  - 1) The Contractor shall minimize disruptions to the State work force as much as possible
  - 2) The Contractor shall leave all work areas secured, safe, and clean after stopping for the day.
- A.3.e The Contractor shall use the State's work order system to receive and update work orders. All work order direction shall be in written form (electronic or paper), with the exception of stop work orders, which may be given verbally (followed by written notification). All work orders shall be completed on time as defined by the 'due date' on the work order issued by the State.
- A.3.f The Contractor shall staff an office within each of the following regions: East Tennessee, West Tennessee, and Nashville. This office shall be operated by the Prime Contractor, not a subcontractor. In addition, each of these offices shall have internet access.

#### A.4 State Responsibilities. The State will:

A.4.a Provide Statement of Work Requirements to Contractor.

- A.4.b Review proposals and estimated work documents submitted in response to Statements of Work Requirements.
- A.4.c Manage this Contract and continually evaluate the Contract's effectiveness and quality.
- A.4.d Approve the Contractor quality assurance plan, as part of the project management planning, and maintain the plan throughout the Contract.
- A.4.e Periodically review quality control practices and recommend or require changes in those practices.
- A.4.f The State will evaluate project performance against the project quality assurance plan periodically and recommend process corrective action and improvements as needed.

In addition the State will:

- Perform periodic quality assurance assessments as scheduled in the quality assurance plan.
- Conduct assessment meetings, as needed, with all responsible parties to consider recommendations and determine resulting actions.
- Take agreed-upon actions identified as State responsibilities.
- A.4.g Pertaining to Project Management responsibilities, the State will:
  - Determine the disposition, including priority, of all new installations, upgrades, and changes to building premise cabling systems.
  - Periodically review management practices and recommend or require improvement in those practices as needed.
- A.4.h The State is responsible for the following:
  - Providing space for communications closets
  - Providing electrical service for installed equipment, including utility outlets
  - Providing HVAC for facilities as dictated by installed equipment
  - Providing lighting for closet areas
  - Providing security and protection of installed equipment.
- A.4.i The State will issue all work orders in written form, electronically or paper, except for stop work orders that can be verbally issued by the State Project Manager (to be followed immediately by written direction).
- A.4.j The State will perform routine inspections, in accordance with State policy, of the Contractor's work under this Contract.

#### B. CONTRACT TERM:

- B.1 <u>Contract Term.</u> This Contract shall be effective for the period commencing on April 1, 2008 and ending March 31, 2011. The State will have no obligation for services rendered by the Contractor, which are not performed within the specified period.
- B.2 <u>Term Extension</u>. The State reserves the right to extend this Contract for an additional period or periods of time representing increments of no more than one (1) year and a total contract term of no more than five (5) years, provided that the State notifies the Contractor in writing of its intention to do so at least thirty (30) days prior to the contract expiration date. An extension of the term of this Contract shall be affected through an amendment to the Contract. If the extension of the Contract necessitates additional funding beyond that which was included in the original Contract, the increase in the State's maximum liability shall also be affected through an amendment to the Contract and shall be based upon rates provided for in the original contract.

#### C. PAYMENT TERMS AND CONDITIONS:

C.1 Maximum Liability. In no event shall the maximum liability of the State under this Contract exceed [WRITTEN DOLLAR AMOUNT] (\$ [ NUMBER AMOUNT ] ). The Service Rates in Section C.3 shall constitute the entire compensation due the Contractor for the Service and all of the Contractor's obligations hereunder regardless of the difficulty, materials or equipment required. The Service Rates include, but are not limited to, all applicable taxes, fees, overheads, and all other direct and indirect costs incurred or to be incurred by the Contractor.

The Contractor is not entitled to be paid the maximum liability for any period under the Contract or any extensions of the Contract for work not requested by the State. The maximum liability represents available funds for payment to the Contractor and does not guarantee payment of any such funds to the Contractor

under this Contract unless the State requests work and the Contractor performs said work. In which case, the Contractor shall be paid in accordance with the Service Rates detailed in Section C.3. The State is under no obligation to request work from the Contractor in any specific dollar amounts or to request any work at all from the Contractor during any period of this Contract.

- C.2 <u>Compensation Firm</u>. The Service Rates and the Maximum Liability of the State under this Contract are firm for the duration of the Contract and are not subject to escalation for any reason unless amended.
- C.3. Payment Methodology. The Contractor shall be compensated based on the payment rates herein for units of service authorized by the State in a total amount not to exceed the Contract Maximum Liability established in Section C.1.
  - a. The Contractor's compensation shall be contingent upon the satisfactory completion of units, milestones, or increments of service defined in Section A.
  - b. The Contractor shall be compensated based upon the following payment rates:
    - (1) For service performed from April 1, 2008, through March 31, 2011, the rates detailed in Premise Cabling and Equipment Catalog of Services, shall apply.
    - (2) In the event that the Contract is extended in accordance with Contract Section B.2, for service performed from April 1, 2011, through March 31, 2012, the Contractor shall be compensated based upon the payment rates given in the "Year 3 Costs" in Premise Cabling and Equipment Catalog of Services, but adjusted by the percentage increase, if any, between the Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, ALL ITEMS expenditure category, not seasonally adjusted, index base period: 1982-84=100) published by the United States Department of Labor, Bureau of Labor Statistics (BLS) in January, 2011, and that figure published in the same month, 12-months prior, up to a maximum of five percent (5%).
    - (3) In the event that the Contract is extended in accordance with Contract Section B.2, for service performed from April 1, 2012, through March 31, 2013, the Contractor shall be compensated based upon the payment rates determined in C.3.b.(2) above, but adjusted by the percentage increase, if any, between the Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, ALL ITEMS expenditure category, not seasonally adjusted, index base period: 1982-84=100) published by the United States Department of Labor, Bureau of Labor Statistics (BLS) in January, 2012, and that figure published in the same month, 12-months prior, up to a maximum of five percent (5%).
    - (4) The foregoing notwithstanding, in the event that the Proposer can provide written documentation, acceptable to the State, that there has been an exorbitant increase in the cost of one or more of the materials or labor ("input resources") used in the production of Contractor-provided products or services listed as line items in Premise Cabling and Equipment Catalog of Services, the State will consider a reasonable price increase for the affected line item(s). Written documentation in this case shall be calculations derived from the Bureau of Labor and Statistics (BLS), Producer Price Indexes (PPI) and/or Employment Cost Indexes (ECI) that verify and support the amount of the requested price increase.

The following additional provisions apply:

- (a) With appropriate documentation and at the State's sole discretion, such increases shall be applicable to any contract year: that is, contract years one through three, as well as any extensions executed under Contract Section B.2, as applicable.
- (b) The Contractor shall only request a line-item price increase under Contract Section C.3.b.(4) if the Contractor can demonstrate, using the PPI and/or ECI as the basis of its calculations, that the price for input resources that make up a significant portion of the cost for the line item in question has increased more than thirty percent (30%) over the previous one-year period used as the basis for the calculation. In order for the State to consider a line-item price increase, the Contractor shall document and prove, to the State's satisfaction, that (i) the costs for either the materials or labor component of the line item in question has increased by the required percentage, and (ii) these costs make up a significant enough portion of the total cost of resources for that line item to warrant the price increase.
- (c) The State will entertain requests for price increases no more than once in any given Contract year, and these requests shall coincide with Contract year anniversaries, as described in Sections C.3.b.(1), C.3.b.(2), and C.3.b.(3). If the Contractor demonstrates, and the State concurs that, due to the timing of an exorbitant increase in the cost of input resources, it would place an undue financial burden on the Contractor if the State were to delay consideration of the increase until the next Contract year, the State may consider price increases on some other interval not tied to the Contract year end. However, this shall be at the State's sole discretion.

- (d) The percentage increase described in this Section C.3.b.(4) shall apply only to those line items with input resources that were directly affected by the exorbitant price increase. All other line items shall be subject to normal CPI driven increases, as defined in Sections C.3.b.(2) and C.3.b.(3).
- (e) The State will evaluate each Contractor request for a price increase and shall be the sole and final determinant as to whether a line item price increase shall be allowed. State disapproval of a price increase request shall in no event be construed as a breach of contract by the State.
- (f) In the event that the State does allow a price increase, the increase shall be effected through an amendment to the Contract.
- c. The Service Rates in Premise Cabling and Equipment Catalog of Services shall include, where necessary, the following: horizontal cable (estimated at 175' on average), jack assemblies, face plates, connectors, dust covers, designation strips, connecting blocks, demarcations, termination of all cables, ancillary items, labeling/tagging, testing, site visit(s), as-built drawings in a form and format as required by the State, and input to a CMS (Cable Management System). Ancillary items are defined as, but not limited to, the following: proper mounting hardware, bolts, screws, tywraps, and tape.
- d. The Service Rates further include, but are not limited to, all applicable taxes, fees, overheads, and all other direct and indirect costs incurred or to be incurred by the Contractor.
- e. The Contractor shall submit invoices upon project completion, in form and substance acceptable to the State as outlined in Premise Cabling Billing Requirements, prior to any payment.
  - i. All invoices shall include, at a minimum, the following 8 points of information: request for service number, contract number, contract line number, item description, quantity being invoiced, contract unit price, extended unit price, and total invoiced amount.
  - ii. In addition, normal orders shall include: as-builts, cable lengths and cable test results, and labor time sheets for labor hours. In some cases the State may require submission of additional documentation based on particular orders, as determined by the State.
- C.4. <u>Service Rates</u>. Except where specifically stated otherwise, the Service Rates in Premise Cabling and Equipment Catalog of Services shall include installation and labor. However, the Contractor shall be reimbursed on an hourly rate basis (refer to Lines 7701 through 7717 of Premise Cabling and Equipment Catalog of Services) when the State identifies and documents a special need for services not directly related to a specific product installation.

For example, the State may, from time to time, require demolition services and/or infrastructure architecture and design services for a facility. The Contractor shall provide these specialized services only when such services are authorized in advance by the State Cabling Department management.

- C.4.a. For services described in this Section, the Contractor shall be paid the Premium Rates listed in Premise Cabling and Equipment Catalog of Services, when the State requests and pre-authorizes services to be provided on weekends, on State holidays, and on weekdays before 7:30 AM or after 5:00 PM. All services billed on an hourly rate basis shall be rounded (up or down) to the nearest hour for payment.
- C.4.b. Several specific line items do not include labor. In those cases, the line item clearly states in the item description that labor is not included.
- C.5. <u>Unique Equipment Rental</u>. The Contractor may, from time to time, identify the need for equipment rental to deal with a unique requirement. The State will reimburse the Contractor only for the direct cost of such rentals, and only when the State pre-authorizes such rentals based on documentation of need provided by the Contractor.
  - C.5.a. The State Cabling Department management shall pre-authorize unique equipment rental in writing upon submission of an itemized statement of need and of the costs associated with the rental of the equipment.
  - C.5.b. For equipment rentals pre-approved by the State Cabling Department management, the Contractor shall be reimbursed the direct costs as reflected in the rental invoice for the specified equipment.
  - C.5.c. Regardless of an equipment rental rate, the maximum amount the State will reimburse the Contractor is limited to Three Hundred Dollars (\$300.00) per day per piece of equipment.
- C.6. <u>Travel Compensation</u>. The Contractor shall not be compensated or reimbursed for travel, meals, or lodging.
- C.7. Payment of Invoice. The payment of the invoice by the State will not prejudice the State's right to object to or question any invoice or matter in relation thereto. Such payment by the State will neither be construed as

acceptance of any part of the work or service provided nor as an approval of any of the amounts invoiced therein.

- C.8. <u>Invoice Reductions</u>. The Contractor's invoice shall be subject to reduction for amounts included in any invoice or payment theretofore made which are determined by the State, on the basis of audits conducted in accordance with the terms of this contract, not to constitute proper remuneration for compensable services.
- C.9. <u>Deductions</u>. The State reserves the right to deduct from amounts which are or shall become due and payable to the Contractor under this or any contract between the Contractor and the State of Tennessee any amounts which are or shall become due and payable to the State of Tennessee by the Contractor.
- C.10. <u>Automatic Deposits</u>. The Contractor shall complete and sign an "Authorization Agreement for Automatic Deposit (ACH Credits) Form." This form shall be provided to the Contractor by the State. Once this form has been completed and submitted to the State by the Contractor all payments to the Contractor, under this or any other contract the Contractor has with the State of Tennessee shall be made by Automated Clearing House (ACH). The Contractor shall not invoice the State for services until the Contractor has completed this form and submitted it to the State.

#### D. STANDARD TERMS AND CONDITIONS:

- D.1. <u>Required Approvals</u>. The State is not bound by this Contract until it is approved by the appropriate State officials in accordance with applicable Tennessee State laws and regulations.
- D.2. <u>Modification and Amendment</u>. This Contract may be modified only by a written amendment executed by all parties hereto and approved by the appropriate Tennessee State officials in accordance with applicable Tennessee State laws and regulations.
- D.3. <u>Termination for Convenience</u>. The State may terminate this Contract without cause for any reason. Said termination shall not be deemed a Breach of Contract by the State. The State will give the Contractor at least ninety (90) days written notice before the effective termination date. The Contractor shall be entitled to receive compensation for satisfactory, authorized service completed as of the termination date, but in no event shall the State be liable to the Contractor for compensation for any service which has not been rendered. Upon such termination, the Contractor shall have no right to any actual general, special, incidental, consequential, or any other damages whatsoever of any description or amount.
- D.4. <u>Termination for Cause</u>. If the Contractor fails to properly perform its obligations under this Contract in a timely or proper manner, or if the Contractor violates any terms of this Contract, the State will have the right to immediately terminate the Contract and withhold payments in excess of fair compensation for completed services. Notwithstanding the above, the Contractor shall not be relieved of liability to the State for damages sustained by virtue of any breach of this Contract by the Contractor.
- D.5. <u>Subcontracting.</u> The Contractor shall not assign this Contract or enter into a subcontract for any of the services performed under this Contract without obtaining the prior written approval of the State. If such subcontracts are approved by the State, they shall contain, at a minimum, sections of this Contract pertaining to "Conflicts of Interest" and "Nondiscrimination" (sections D.6. and D.7.). Notwithstanding any use of approved subcontractors, the Contractor shall be the prime contractor and shall be responsible for all work performed.
- D.6. <u>Conflicts of Interest</u>. The Contractor warrants that no part of the total Contract Amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Contractor in connection with any work contemplated or performed relative to this Contract.
- D.7. Nondiscrimination. The Contractor hereby agrees, warrants, and assures that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Contract or in the employment practices of the Contractor on the grounds of disability, age, race, color, religion, sex, national origin, or any other classification protected by Federal, Tennessee State constitutional, or statutory law. The Contractor shall, upon request, show proof of such nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.
- D.8. <u>Prohibition of Illegal Immigrants</u>. The requirements of Public Acts of 2006, Chapter Number 878, of the State of Tennessee, addressing the use of illegal immigrants in the performance of any Contract to supply goods or

services to the State of Tennessee, shall be a material provision of this Contract, a breach of which shall be grounds for monetary and other penalties, up to and including termination of this Contract.

- a. The Contractor hereby attests, certifies, warrants, and assures that the Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract and shall not knowingly utilize the services of any subcontractor who shall utilize the services of an illegal immigrant in the performance of this Contract. The Contractor shall reaffirm this attestation, in writing, by submitting to the Owner a completed and signed copy of the standard form entitled "Personnel used in Contract Performance" with each application for payment. This form is provided in the Contract Documents. Such attestations shall be maintained by the Contractor and made available to Tennessee State officials upon request.
- b. Prior to the use of any subcontractor in the performance of this Contract, and semi-annually thereafter, during the period of this Contract, the Contractor shall obtain and retain a current, written attestation that the subcontractor shall not knowingly utilize the services of an illegal immigrant to perform work relative to this Contract and shall not knowingly utilize the services of any subcontractor who shall utilize the services of an illegal immigrant to perform work relative to this Contract. Attestations obtained from such subcontractors shall be maintained by the contractor and made available to Tennessee State officials upon request.
- c. The Contractor shall maintain records for all personnel used in the performance of this Contract. Said records shall be subject to review and random inspection at any reasonable time upon reasonable notice by the State.
- d. The Contractor understands and agrees that failure to comply with this section shall be subject to the sanctions of Public Chapter 878 of 2006 for acts or omissions occurring after its effective date. This law requires the Commissioner of Finance and Administration to prohibit a contractor from contracting with, or submitting an offer, proposal, or bid to contract with the State of Tennessee to supply goods or services for a period of one year after a contractor is discovered to have knowingly used the services of illegal immigrants during the performance of this Contract.
- e. For purposes of this Contract, "illegal immigrant" shall be defined as any person who is not either a United States citizen, a Lawful Permanent Resident, or a person whose physical presence in the United States is authorized or allowed by the federal Department of Homeland Security and who, under federal immigration laws and/or regulations, is authorized to be employed in the U.S. or is otherwise authorized to provide services under the Contract.
- D.9. Records. The Contractor shall maintain documentation for all charges against the State under this Contract. The books, records, and documents of the Contractor, insofar as they relate to work performed or money received under this contract, shall be maintained for a period of three (3) full years from the date of the final payment and shall be subject to audit at any reasonable time and upon reasonable notice by the State, the Comptroller of the Treasury, or their duly appointed representatives. The financial statements shall be prepared in accordance with generally accepted accounting principles.
- D.10. Monitoring. The Contractor's activities conducted and records maintained pursuant to this Contract shall be subject to monitoring and evaluation by the State, the Comptroller of the Treasury, or their duly appointed representatives.
- D.11. Progress Reports. The Contractor shall submit brief, periodic, progress reports to the State as requested.
- D.12. <u>Strict Performance</u>. Failure by any party to this Contract to insist in any one or more cases upon the strict performance of any of the terms, covenants, conditions, or provisions of this Contract shall not be construed as a waiver or relinquishment of any such term, covenant, condition, or provision. No term or condition of this Contract shall be held to be waived, modified, or deleted except by a written amendment signed by the parties hereto.

D.13. <u>Independent Contractor.</u> The parties hereto, in the performance of this Contract, shall not act as employees, partners, joint venturers, or associates of one another. It is expressly acknowledged by the parties hereto that such parties are independent contracting entities and that nothing in this Contract shall be construed to create an employer/employee relationship or to allow either to exercise control or direction over the manner or method by which the other transacts its business affairs or provides its usual services. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purpose

The Contractor, being an independent contractor and not an employee of the State, agrees to carry adequate public liability and other appropriate forms of insurance, including adequate public liability and other appropriate forms of insurance on the Contractor's employees, and to pay all applicable taxes incident to this Contract.

- D.14. State Liability. The State will have no liability except as specifically provided in this Contract.
- D.15. <u>Force Majeure</u>. The obligations of the parties to this contract are subject to prevention by causes beyond the parties' control that could not be avoided by the exercise of due care including, but not limited to, acts of God, riots, wars, strikes, epidemics or any other similar cause.
- D.16 <u>State and Federal Compliance</u>. The Contractor shall comply with all applicable State and Federal laws and regulations in the performance of this Contract.
- D.17. Governing Law. This Contract shall be governed by and construed in accordance with the laws of the State of Tennessee. The Contractor agrees that it shall be subject to the exclusive jurisdiction of the courts of the State of Tennessee in actions that may arise under this Contract. The Contractor acknowledges and agrees that any rights or claims against the State of Tennessee or its employees hereunder, and any remedies arising therefrom, shall be subject to and limited to those rights and remedies, if any, available under Tennessee Code Annotated, Sections 9-8-101 through 9-8-407.
- D.18. Completeness. This Contract is complete and contains the entire understanding between the parties relating to the subject matter contained herein, including all the terms and conditions of the parties' agreement. This Contract supersedes any and all prior understandings, representations, negotiations, and agreements between the parties relating hereto, whether written or oral.
- D.19. <u>Severability</u>. If any terms and conditions of this Contract are held to be invalid or unenforceable as a matter of law, the other terms and conditions hereof shall not be affected thereby and shall remain in full force and effect. To this end, the terms and conditions of this Contract are declared severable.
- D.20. <u>Headings</u>. Section headings of this Contract are for reference purposes only and shall not be construed as part of this Contract.
- E. <u>SPECIAL TERMS AND CONDITIONS:</u>
- E.1. <u>Conflicting Terms and Conditions</u>. Should any of these special terms and conditions conflict with any other terms and conditions of this Contract, these special terms and conditions shall control.
- E.2. <u>Communications and Contacts</u>. All instructions, notices, consents, demands, or other communications required or contemplated by this Contract shall be in writing and shall be made by facsimile transmission, by overnight courier service, or by first class mail, postage prepaid, addressed to the respective party at the appropriate facsimile number or address as set forth below or to such other party, facsimile number, or address as may be hereafter specified by written notice.

#### The State:

Steven W. Andress, Manager of Cabling Services Department of Finance and Administration Office for Information Resources 312 8<sup>th</sup> Avenue North, 19<sup>th</sup> Floor Nashville, TN 37243 615-741-7395 (phone) 615-741-8776 (fax)

#### The Contractor:

[NAME AND TITLE OF CONTRACTOR CONTACT PERSON]
[CONTRACTOR NAME]
[ADDRESS]
[TELEPHONE NUMBER]
[FACSIMILE NUMBER]

All instructions, notices, consents, demands, or other communications shall be considered effectively given as of the day of delivery; as of the date specified for overnight courier service delivery; as of three (3) business days after the date of mailing; or on the day the facsimile transmission is received mechanically by the telefax machine at the receiving location and receipt is verbally confirmed by the sender if prior to 4:30 p.m. Central Time. When requested by the State, any communication by facsimile transmission shall also be sent by United States mail on the same date of the facsimile transmission.

- E.3. <u>Subject to Funds Availability.</u> The Contract is subject to the appropriation and availability of State and/or Federal funds. In the event that the funds are not appropriated or are otherwise unavailable, the State reserves the right to terminate the Contract upon written notice to the Contractor. Said termination shall not be deemed a breach of Contract by the State. Upon receipt of the written notice, the Contractor shall cease all work associated with the Contract. Should such an event occur, the Contractor shall be entitled to compensation for all satisfactory and authorized services completed as of the termination date. Upon such termination, the Contractor shall have no right to recover from the State any actual, general, special, incidental, consequential, or any other damages whatsoever of any description or amount.
- E.4. <u>State Ownership of Work Products</u>. The State will have all ownership right, title, and interest, including ownership of copyright, in all work products created, designed, developed, derived, documented, installed, or delivered to the State under this Contract. The State will have royalty-free and unlimited rights to use, disclose, reproduce, or publish, for any purpose whatsoever, all said work products. The Contractor shall furnish such information and data upon request of the State, in accordance with the Contract and applicable State law.
- E.5. Contract Bond. Contractor shall provide a Contract Bond in an amount of TWO MILLION DOLLARS (\$2,000,000.00) based upon the State's exposure for no less than six (6) months of one hundred percent (100%) of the annual Maximum Liability amount for this Contract. The Contract Bond amount shall be adjusted over the course of the Contract with each modification of the annual Maximum Liability based upon the unencumbered value of the Contract amount. The unencumbered value is determined as the contract amount (maximum liability), less the current total of completed and accepted Work Order Sums at time of modification execution.
  - E.5.a Bond shall be executed on Tennessee State Building Commission Standard Form exhibited in the Proposal Documents for the purposes of this project.
  - E.5.b Bond shall be attached to the signed Contract at time of submission to the State by the Contractor.
  - E.5.c Surety is the person or entity identified as such in a bond, and is referred to throughout the Contract Documents as if singular in number. The term "Surety" means the Surety or the Surety's authorized representative.
  - E.5.d A Surety Company issuing a bond shall be licensed to transact business in Tennessee by the Department of Commerce and Insurance. Bonds shall have certified, and current Power-of-Attorney attached for the Surety's Attorney-in-Fact.
  - E.5.e An Attorney-in-Fact who executes a bond on behalf of a Surety shall be licensed by the State of Tennessee as a Resident Agent, and shall affix license number to a bond. Alternatively, a countersignature by, and license number of, a licensed Resident Agent may be affixed to the bond in addition to the signature of the Attorney-in-Fact.
  - E.5.f Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under this Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.
- E.6. <u>State Furnished Property.</u> The Contractor shall be responsible for the correct use, maintenance, and protection of all articles of nonexpendable, tangible, personal property furnished by the State for the Contractor's temporary use under this Contract. Upon termination of this Contract, all property furnished shall be returned to the State in good order and condition as when received, reasonable use and wear thereof excepted. Should the property be destroyed, lost, or stolen, the Contractor shall be responsible to the State for the residual value of the property at the time of loss.

- E.7. Incorporation of Additional Documents. Included in this Contract by reference are the following documents:
  - a. The Contract document, its attachments and referenced components
  - b. All Clarifications and addenda made to the Contractor's Proposal
  - c. The Request for Proposal and its associated amendments
  - d. Technical Specifications provided to the Contractor
  - e. The Contractor's Proposal

In the event of a discrepancy or ambiguity regarding the Contractor's duties, responsibilities, and performance under this Contract, these documents shall govern in order of precedence detailed above.

- E.8. <u>Prohibited Advertising</u>. The Contractor shall not refer to this Contract or the Contractor's relationship with the State hereunder in commercial advertising in such a manner as to state or imply that the Contractor or the Contractor's services are endorsed.
- E.9. Confidentiality of Records. Strict standards of confidentiality of records and information shall be maintained in accordance with applicable state and federal law. All material and information, regardless of form, medium or method of communication, provided to the Contractor by the State or acquired by the Contractor on behalf of the State will be regarded as confidential information in accordance with the provisions of applicable state and federal law, state and federal rules and regulations, departmental policy, and ethical standards. Such confidential information shall not be disclosed, and all necessary steps shall be taken by the Contractor to safeguard the confidentiality of such material or information in conformance with applicable state and federal law, state and federal rules and regulations, departmental policy, and ethical standards.

The Contractor's obligations under this section do not apply to information in the public domain; entering the public domain but not from a breach by the Contractor of this Contract; previously possessed by the Contractor without written obligations to the State to protect it; acquired by the Contractor without written restrictions against disclosure from a third party which, to the Contractor's knowledge, is free to disclose the information; independently developed by the Contractor without the use of the State's information; or, disclosed by the State to others without restrictions against disclosure. Nothing in this paragraph shall permit Contractor to disclose any information that is confidential under federal or state law or regulations, regardless of whether it has been disclosed or made available to the Contractor due to intentional or negligent actions or inactions of agents of the State or third parties.

It is expressly understood and agreed the obligations set forth in this section shall survive the termination of this Contract.

- E.10. <u>Warranty Requirements.</u> It is expressly understood and agreed the warranty requirements set forth in Section A.2.c of this Contract shall survive the termination of this Contract.
- E.11. Tennessee Consolidated Retirement System. The Contractor acknowledges and understands that, subject to statutory exceptions contained in *Tennessee Code Annotated*, Section 8-36-801, et. seq., the law governing the Tennessee Consolidated Retirement System, provides that if a retired member returns to State employment, the member's retirement allowance is suspended during the period of the employment. Accordingly and notwithstanding any provision of this Contract to the contrary, the Contractor agrees that if it is later determined that the true nature of the working relationship between the Contractor and the State under this Contract is that of "employee/employer" and not that of an independent contractor, the Contractor may be required to repay to the Tennessee Consolidated Retirement System the amount of retirement benefits the Contractor received from the Retirement System during the period of this Contract.
- E.12. New Item List. During the course of this Contract, the State may require the Contractor to update the Premise Cabling and Equipment Catalog of Services with additional product(s) or service(s). The additional item(s) shall be within the scope of services. The State will provide the Contractor with a written description of the additional product(s) or service(s), and the Contractor shall submit a price for the additional item(s). If the State and the Contractor reach an agreement regarding the item(s) and the price associated with the item(s), the agreement shall become effective by means of a contract amendment. Any such amendment requiring additional item(s) shall be mutually agreed upon by the parties and signed by the Contractor and the head of the procuring agency and shall be approved by other State officials as required by State laws and regulations.

- E.13. <u>HIPAA Compliance</u>. Contractor warrants to the State that it is familiar with the requirements of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and its accompanying regulations, and shall comply with all applicable HIPAA requirements in the course of this contract. Contractor warrants that it shall cooperate with the State in the course of performance of the contract so that both parties shall be in compliance with HIPAA, including cooperation and coordination with State privacy officials and other compliance officers required by HIPAA and its regulations. Contractor shall sign any documents that are reasonably necessary to keep the State and Contractor in compliance with HIPAA, including but not limited to business associate agreements.
- E.14. Adding Non-Prepriced Items to the Premise Cabling and Equipment Catalog of Services.
  - a. During the course of this contract, the State may request that the Contractor update the Premise Cabling and Equipment Catalog of Services with additional line items, otherwise known as "Non-Prepriced Items" or "NPIs." The NPIs shall be within the general scope of services. The State will provide the Contractor with a written description of the NPI, and the Contractor shall submit a price to the State for the NPI.
  - b. The State requires that the pricing offered to the State for NPIs be competitive with pricing offered to the market in general. The Contractor shall provide detailed documentation to the State to substantiate the proposed cost(s). This documentation may be in the form of invoices to the vendor, records of employment costs, component costs, or other documentation that clearly and specifically verifies the cost of the input resources to the Contractor. The Contractor may apply a markup of no more than [NON-PREPRICED ITEM MARKUP PERCENTAGE FROM PART B OF COST PROPOSAL SHALL BE ENTERED HERE] to the Contractor's invoiced cost to determine the cost proposed to the State.
  - c. For any input resource that is a component of an NPI, the State will have the option to require the Contractor to obtain three (3) bids for the resource in question. If the State invokes this option, the Contractor shall incorporate the input resource(s) with the lowest bid price into its NPI proposed cost. In this event, the Contractor shall provide to the State records of the bid process to substantiate that the lowest bid price(s) were used.
  - d. If the State and Contractor reach an agreement regarding the service(s) and the cost(s) associated with the addition, the State will add the new line items to the Premise Cabling and Equipment Catalog of Services, through the Contract amendment process. Such amendments shall be signed by the Contractor and the head of the procuring State agency and approved by other State officials as required by State Laws and Regulations. The Contractor shall not commence additional work until the State has issued a written contract amendment and secured all required approvals.
  - e. All Contractor, Supplier, or Subcontractor pricing information used in determining the price(s) for NPIs shall be subject to audit by the State, the Tennessee Comptroller of the Treasury, or their duly appointed representatives. Such audit shall be performed during normal business hours upon reasonable notice by the State.

**End of Contract Terms** 

# **IN WITNESS WHEREOF:**

BY CONTRAC	TOR: [CONTRACTOR LEGAL ENTITY NAME]:		
Signature:			
		Date	
Title:			
AND BY OWNER	STATE OF TENNESSEE Department of Finance and Administration		
APPROVED:	Michael A. Fitts, State Architect:	Date	
	Wichael A. Fitts, State Architect.	Date	
APPROVED:			
	M.D. Goetz, Jr. Commissioner Department of Finance and Administration:	Date	
APPROVED:	John C. Margan, Comptroller of the Traceum	Data	
	John G. Morgan, Comptroller of the Treasury for compliance with policy and statute	Date	
APPROVED:			
	Robert E. Cooper, Jr., Attorney General for form and legality	Date	

# Premise Cabling and Equipment Catalog of Services

[AFTER CONTRACT AWARD AND PRIOR TO CONTRACT APPROVAL, THE CONTENTS OF THE APPARENT-BEST-EVALUATED PROPOSER'S COST PROPOSAL SPREADSHEET WILL BE TRANSCRIBED HERE.]

-- Premise Cabling and Equipment Catalog of Services is Approximately 60 Pages --

# State of Tennessee

# Premise Cabling Billing Requirements

The State requires three (3) CD's (1 original and 2 duplicates) to be provided as invoicing on CD ROM to the department of finance and administration, billing services, by the 10th of the month at no additional charge to the State of Tennessee. The CD provided must be compatible for use with computer equipment (hardware and software) used by the State and must be operational.

Billing services will assist in the formatting of such CD invoicing to insure the proper information is in place. The CD ROM invoicing shall be delivered each month in lieu of paper invoicing covering the service on the contract.

The CD ROM must provide all billing information of all usage associated with each request for service. The billing information on the CD ROM shall be matched with the contract line commodity codes used by the State.

If at anytime, the vendor is unable to submit accurate invoice information in the required format, the State of Tennessee, department of finance and administration, billing services, may at its sole option refuse payment of vendor's invoice, for any and all items, or charges not supported by the CD ROM records, or may delay payments without penalty until the detail report is accepted.

Records that do not conform to the above criteria shall be rejected from the CD ROM received and must be credited to the State of Tennessee's account no later than the second consecutive month after the date of rejection.

Rejected records can be resubmitted after correction no later than sixty (60) calendar days from the date of rejection by adding to the current month's CD ROM invoice. The State of Tennessee will not accept corrections after June 30<sup>th</sup> (the State's fiscal year end) of any year.

All requests for credits made ten (10) calendar days or more before the close of a billing cycle must be reflected on the next invoice. If the vendor does not include the credits requested and due on the invoice, the State will deduct a like amount from future bills.

The format of the billing CD must be provided to billing services, in writing, within thirty (30) days of award of contract. An operational sample of the CD must be provided and approved by department of finance and administration, billing services as functional within ninety (90) calendar days of contract award.

Format of records must include:

- 1) Account number
- 2) Invoice date
- 3) Rfs number
- 4) Commodity code
- 5) Quantity
- 6) Charges and credits

At the bottom of the billing records a summary record must be provided that summarizes the billing by commodity code, quantity, and the amount billed to each commodity code.

#### Invoices are to be sent to:

State of Tennessee
Department of Finance and Administration
Billing Services
20th floor, WRS Tennessee Tower
312 8th Ave. North
Nashville, TN 37243

Vendor invoicing contact (vendor to complete)

This information shall be updated with billing services, when Changes in personnel occur during the full contract term.

# Billing acceptance

Upon satisfactory completion of a ninety (90) calendar day billing acceptance period, the State shall issue written notification of billing acceptance. If the vendor fails to gain billing services acceptance within ninety (90) calendar days from contract award effective date, the State may terminate the contract.

#### Payment of invoices:

The vendor shall complete and sign an "authorization agreement for automatic deposit (ach credits) form." This form shall be provided to the vendor by the State. Once this form has been completed and submitted to the State by the vendor payments shall be made by automated clearing house (ach). The vendor shall not invoice the State for services until the vendor has completed this form and submitted it to the State.

#### Remedies

The vendor will be imposed a penalty of \$1,000.00 if a readable CD ROM for billing purposes is not delivered, after the initial ninety (90) day award period, by the 10th day of the following month. An additional charge of \$100.00 a day will be imposed on the vendor for each additional day of the contract that the vendor does not have a readable CD ROM.

#### Travel compensation

The	vendor shall	not he	compensated of	or reimburse	d for travel	meals	or lodging
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End of form

# **Premise Cabling Standards**

For the State of Tennessee



# State Of Tennessee

**REVISION DATED November, 2007** 

STRUCTURED CABLING

Infrastructure Design Tennessee Tower 15<sup>th</sup> Floor 312 8<sup>th</sup> Avenue North Nashville, TN. 37243

For questions or additional information please contact 615-253-6120

**Structured Cabling Initiative and Overview** 

08 12 01

The State of Tennessee Telecommunications Department has adopted a fixed set of cabling infrastructure standards to which all communications (voice, data, & video on copper cables, fiber optics, coaxial cables and wireless) installations shall adhere. The purpose of this document is to describe these cabling infrastructure standards. These guidelines shall be used by analysts, system planners, space planners, designers, and architects when approaching state telecommunications wiring planning. When closely adhered to these cabling standards will assure the installation meets industry standards and reduce costs in troubleshooting, moves, adds and changes.

The treatment of telecommunications cabling infrastructure, as a long-term investment is essential. Telecommunications cabling infrastructure must be planned for and funded with the same level of importance and over similar time horizons as all other utilities. An important point to consider at the onset of a cabling venture is that it is less expensive in the long run to overestimate communications needs at the beginning than it is to add capacity after the fact.

The initial cost of a structured cabling venture may seem expensive. But, it is necessary to consider near-term and future growth when considering this expense. Structured plans become more cost effective over time, because it is easy and relatively inexpensive to move and add Work Areas in a structured plan.

Today's approach towards creating a cabling infrastructure provides the flexibility to support the higher speed and greater bandwidth communications that tomorrow's networks will require. A structure that allows for proper maintenance and record keeping for the infrastructure as additions, moves, and network reconfigurations is necessary as well.

There are two basic elements to this approach. The first is recognition of communications cabling as another designed utility in the building infrastructure. Second, the use of a modular design concept as exemplified in this document.

In today's high-speed information society, it is no longer practical or prudent to view the cabling as an adjunct to the equipment. These old unstructured designs will be inadequate to support electronic equipment and high-speed communications for growth or troubleshooting.

The computer and communications equipment used in a building today will be replaced several times over the potential life cycle of a well designed, structured <u>cabling</u> system installation. Today's networks and equipment will be supplanted by more sophisticated and demanding technologies. Users will require a means to start with modest installations that can accommodate future expansion into building and campus-wide networks

Therefore, flexibility in connectivity is essential to providing both current and future adequate service to our customers. Because of the wide variation in the assignment and the use of office space, a <u>well-defined</u>, fixed set of requirements is necessary to provide this flexibility. Work Area cabling must be capable of supporting a wide variety of voice/data configurations.

The Open Systems Interconnection (OSI) Reference Model is a seven-layer communications processing model used in all communications today. Layer 1 of the OSI model is designated the physical layer. The physical layer is where all the connectivity occurs and the media that transports the signals from one user to another. This physical layer adequately and correctly installed is very critical to the entire telecommunications systems performance.

Copper, fiber and coax form part of the physical infrastructure that is the transport media for transmitting information throughout an organization, connecting a variety of devices such as telephones, personal computers, terminals, modems, facsimile machines, and videoconferencing equipment. The cabling plan should address and adhere to building codes (both national and local), security (both closet entrance and surveillance), disaster recovery planning, and aesthetic concerns. In situations involving wireless applications the other wireless applications in the building plus physical structure have to be considered. A well designed structured cabling infrastructure will account for as much as possible any new emerging and evolving network technologies.

Cable systems management and maintenance of cable records has also emerged as a major cost consideration. A well-designed structured cabling system will not remain that way for very long without a good cable management system. Moves, Additions and Changes (MAC) costs will

increase drastically in the absence of a cabling management system.

We are no longer in a world where telecommunications abilities are viewed as a luxury; they are now a necessity to conduct everyday business. The industry now views telecommunications "structured cabling" as the "Fourth Utility" along with Plumbing, Electrical, and HVAC. Structured cabling has now evolved into a basic element of a facility's infrastructure.

It is essential that Telecommunications Planners and designers be included from the inception, early planning, design, and implementation phases of every Diagram for a Structured Cabling System

A key element in this approach is to plan projects in conjunction with capital projects, property management, other agencies, suppliers, and vendors, emphasizing the importance of looking to the future in planning telecommunications

To insure the integrity and quality of the state's cabling infrastructure, all cabling placed by the State shall be installed to conform to ANSI/TIA/EIA, BICSI TDMM (Telecommunications Distribution Methods Manual) Standards (in each case the most recent revision) plus any addendums to the State of Tennessee Voice and Data Cabling Infrastructure Standards. In addition to the standards, the documents listed at the end of this section should be referenced in the event any discrepancies or confusion occurs.

# **Design Considerations**

# 1) Standards & Federally Mandated Codes

Successfully designed and implemented cabling systems are based on codes and standards set by the federal government, standards based organizations and of course the AHJ (authority having jurisdiction). The first wiring standard developed, the TIA/EIA-568, was approved in July 1991. In the fall of 2004 a new revision of the CSI (Constructors Specifications Institute) Master Format, the format by which the approval process of a building design is created, included 3 divisions that contained elements of a structured cabling design as designated levels of the design process. These divisions are the avenues in which the telecommunication engineers will use to input the communications layer into the architectural design.

The local authorities (Fire Marshall (AHJ) and /or commissioner agent) have the ability to add more stringent requirements that must be adhered to for a certificate of occupancy to be granted. With respect to the other organizations always reference the latest revision of any publication of codes or standards. Here is a list of some of the more applicable codes and standards bodies aligned with structured cabling infrastructure.

- a) ANSI/TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standards. Part 1
- b) ANSI/TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standards. Part 2
- c) ANSI/TIA/EIA-568-B.3 Optical Fiber Cabling Components Standards. TIA-455 Fiber Optics Test Procedures
- d) ANSI/TIA/EIA-569-B Commercial Building Standards for Telecommunications Pathways and Spaces
- e) ANSI/TIA/EIA-854 Full Duplex Specification for 1000Base-TX
- f) ANSI-J-STD-607 Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications. Also IEEE 1100 Recommended Practices for powering and grounding sensitive electronic equipment
- g) ANSI/TIA/EIA-758 Customer Owned Outside Plant Telecommunications Cabling Standards.
- h) ISO/IEC 11801 International Organization for Standardization / International electro technical Commission
- i) IEEE 802.11 Wireless LAN's
- j) IEEE 802.16 Broadband Wireless Metropolitan Area Networks
- k) Americans with Disabilities Act (ADA) Title IV, Appendix C: Telephone accessibility in public areas.
- l) Building Industries Consulting Services International (BICSI) Telephone Distribution Methods Manual\_(TDMM), Latest Revision.
- m) Insulated Cable Engineers Association (ICEA)
- n) For Abandoned Communications Cable reference NEC 645.5 (D) (6), NEC 800.2, and 800.53.National Electrical Manufacturers Association (NEMA).
- o) American Society for Testing Materials (ASTM).
- p) National Electric Code (NEC®).
- q) Institute of Electrical and Electronic Engineers (IEEE).
- r) Underwriters Laboratories (UL). (UL 444 & UL 13).

# 2) Communications Rooms/Closets

This communication room will have many names, as discussed later in this section, but each will serve the same purpose, connectivity. This connectivity creates the network for both internal and external users. The Communications closets must be environmentally controlled 24 hours per day, 7 days per week, maintain a positive pressure with a minimum of one air change per hour, and not present a hostile environment to computer or telephone equipment. Heat dissipation from the telecommunications equipment will vary from application to application and will be provided during the project design so that the HVAC to the room will be sized adequately. Walls for this room shall extend from the floor to the deck (floor above) and not be open to a plenum ceiling. All penetrations in this wall for cable entry must be fire stopped and if they are mechanical penetrations they shall be fire rated. Dropped ceilings or permanent ceilings should not be installed in these rooms. Lighting should be installed at a height of 8' 6" and designed to provide a minimum of 50 foot-candles measured at 3 feet above the finished floor. At least 2 walls should be lined with 8 feet tall ¾ inch, AC plywood. Plywood should be fire retardant or painted with a fire retardant light gray or white (NOT BLACK) paint. If painted the plywood shall be painted on the front, rear and edges. The Cabling contractor will place this plywood. Duplex electrical outlets should be installed at the bottom of the plywood at 6' intervals with no more than two (2) duplex outlets per 20 AMP dedicated non-switched circuit. This room should also have duplex dedicated non-switched circuits that are 208 volts, utilizing a 30-amp breaker. If emergency or back-up power is available in the building these circuits will need to be connected to that service. A multi-point ground, conforming to ANSI J-STD-607 and NEC Article 800 and Article 250, with a minimum 6 AWG wire, must be provided in this space to be used for grounding protection devices and equipment. In the environment where multiple delicate electronic communications devices are mounted then each should terminate their ground on the multiple point ground to alleviate voltage potentials. Doors should be at least 36 inches wide and 80 inches tall, installed to swing out with keys maintained by communications personnel. Floors should be tile or treated concrete (never carpeted) to minimize dust and the potential for static buildup. The room must be secure with access limited to responsible telecommunications personnel. All communication rooms should have locking doors with keys unique to communications. In most applications, particularly a multi-floor building, these rooms should be a minimum of 8' x 10'. Several factors will need to be determined when sizing this room, such as the amount of equipment planned for the room, the size of the area it services and what type of room this will be (MDF, EF, IDF). The NEC considers low voltage as anything less than 600 volts and the code for clearances for low voltage is 36". This is crucial for space between the cabinet or rack (wall or floor) and the wall. If there is equipment on the wall that protrudes from the wall then the distance starts from the furthest protrusion. People must be able to work on the equipment without interfering with the connectivity. When determining the closet size, close consideration has to be given to how much area the closet provides connectivity for and by what degree that floor area can grow or change. The size of the closet and the clearances between equipment will be affected by other vendor equipment that is often placed in the communications area, such as building automation, life and safety, security, audio, and CATV systems. Boiler rooms, air exchange rooms, janitorial closets, electrical distribution closets, elevator equipment rooms or areas with water heaters, wet sinks, or high potentials of EMI or heat are not acceptable for communications use. It is essential that these spaces be dedicated to telecommunication. The design aspects of the closets, which house telecommunications, are specified in the TIA/EIA 569 Standard. A separate lay out must be designed for each closet for each building along with a wall layout showing the separation of riser termination fields and horizontal termination fields. In the instance where there is no closet provided to house the Telecommunications needs then a lockable cabinet can be utilized. The area where this cabinet is located must meet all the parameters as an actual telecommunications space. The cabinets are shown at the end of this document.

#### a) MDF / MC / Server Room

The MDF (Main Distribution Frame) is also known as the MC (Main Cross Connect). Voice distribution and data distribution emanates from this point. Administration of the communications system also begins here. An MDF may also serve as an IDF (explained in the next paragraph) if it acts as a termination point for horizontal cabling. In some instances this room will house telecommunications personnel and should be adequately sized for a work area. This is the communications room (server room) that will house the majority of the data switching, routing and back-up storage. Due to the sensitivity of this equipment and the large number of devices that can be placed in this room it is best to utilize a raised floor. This

RP) 17

maintains better cool and clean airflow for the equipment and easier wire management below the floor.

#### b) IDF/IC/TC

Intermediate Distribution Frame (IDF) may also be called the IC (Intermediate Cross Connect) or the TC (Telecommunications Closet). The same parameters fall true for this closet as for the MDF. The differences lie in the branch of telecommunications. The riser cables that feed this IDF will come from the MDF. This area will act as a termination and cross connect point for the horizontal cabling to the riser backbone.

#### c) Entrance Facility (EF)

This closet is the room where the main communications feed enters the building and where the demarcation point is located. It can be an OSP run from the local access provider for voice and/or data or it could be part of a campus OSP design entrance point. The Service Provider's network interface (RJ-21X blocks or a copper or fiber multiplexer) will be located here. The physical requirements of the network interface are defined in ANSI/TIA/EIA-569. The EF can also be designated as the MDF if that is where the cables enter the building. If the entrance facility and the MDF are not the same room and the OSP cabling has to be run to the MDF before termination, then the cables (copper and/or fiber) have to be transitioned to a cable that is rated for indoor use within 50' of building entrance or the end of the closed conduit in which they entered the building. The entrance facility conduits shall be at least two (2) 4-inch conduits that run to the property line. The service provider (by law) decides the point at which the OSP cables connect to the local service along the property line.

#### 3) Pathways

Pathways are the routes cabling traverses through, to and within a building. Many different design considerations are utilized in the creation of the pathways. Though cost considerations weigh heavy in the planning stage, feasibility and protection of the cable should dominate the route selection. Within the interior of the building the route will need to remain clear of sources of EMI, humidity, and heat. NEC Article 100 defines pathways.

#### a) Entrance Facility Conduits

With the sparse array of buildings that are a part of the same company or network topology that need connectivity between them determines that each building needs connection to an outside source Every building must have connection to a WAN or just the outside internet. Entrance Facilities for the local telephone company or access provider must be provisioned. This will consist of a minimum of two (2) 4-inch conduits extending from the MDF or main cross connect (telephone) room to the property line. If the OSP conduits are placed underground and enter the floor of the entrance facility they must be at least 4"above finished floor. Conduit outside the building must be either rigid steel or rigid PVC encased in concrete (where required). The State is responsible for any infrastructure, aerial or underground, to the property line, not including cable.

#### b) Outside Plant

In a Campus type environment or where there are two or more buildings that will utilize the same network or phone system, there will need to be an outside plant infrastructure designed and placed. There are 3 different ways to connect these buildings for telecommunications, aerial, direct buried (only where specified), and underground conduit. Wireless is another method but discussed in a separate chapter. This system will consist of entry points for each building and the path designated by the designer, which will conform to BICSI's Customer-Owned Outside Plant Design Module.

#### 1) Aerial

In the instances where below ground is not an option or there are existing poles or structures between the two or more buildings that need to be connected then aerial methods can be utilized. Verification of historical buildings or other aesthetic issues need to be considered in designing this route. Penetrations into any building will be coordinated with the building superintendent and will vary depending on the type of exterior wall and the proximity to the necessary point of termination. There are different methods and materials for attaching to different types of exteriors. During the

design phase considerations will have to be placed to the possibility of vehicular damage to the area where the poles are or will be placed, risk of close proximity to trees or limbs that could fall on the lines creating outages, amount of utilities at the locations where the poles will need to be placed, distance between the new cable and existing aerial cables (power and communication), the terrain, and the aesthetics after completion. A permit will have to be obtained for crossing any waterways and/or railroads. The controlling regulatory body of the right of way will set the specifications for clearance and crossing. Once the route is designed the contractor shall place strands between support devices to lash the aerial cable too. Slack span runs shall not be utilized between poles. A drip loop shall be placed at the connection to the building. Guy wires placed shall mimic the size of strand wire and will be placed on poles that hold a turn more than 5 degrees. The last pole or connecting structure to the entry point of the building shall be less than 100 feet. Aerial, as far as a new installation should only be considered when there will be or there is no other communications entrance.

#### 2) <u>Underground conduit</u>

In this instance maintenance hole (MH) or conduit system is installed. Manholes and/or hand holes and/or pull boxes are placed as a route connecting each building. No less than two (2) 4-inch conduits should be placed from each point of connection in the underground OSP system. One of the conduits should be filled with a cellular raceway for fiber such as innerduct or FO-duct. The conduits shall penetrate the wall or floor of each space, per applicable building codes, with a bushing installed on either end to protect the cable. Any open conduits that are not filled at the completion of the install shall be capped with a watertight closure. Although the terrain and local codes will determine the type of conduit installed, generally schedule 40 PVC conduit with a sand or gravel cover is sufficient with a depth of 24" from the top of the pipe to grade. Road crossings or areas subject to heavy loading must be schedule 40 PVC conduits encased in concrete, schedule 80 PVC conduit, or rigid steel conduit. Conduits that run along side of or pass under roads or railways should adhere to all local and federal codes plus BICSI standards. Conduits must have no more than two (2) 90° bends, or a total of 180°, in any single conduit run. All bends must be at least 36" radius bends (sweeping bends, no LB's). If more bends are required, pull boxes, hand holes or manholes (to be determined by the application) must be installed. Conduit length between closets, manholes, hand holes, etc., must not exceed 600', as determined by the application and number of bends in the conduit run. Conduit fill must conform to specifications as listed in the National Electrical Code. For a campus arrangement, conduit should be installed to connect all buildings keeping in mind loop diversity. When the contractor has to enter an existing maintenance hole while performing work for the State of Tennessee (placing new cable, splicing cable or verification of existing) OSHA mandates that a Confined Space Entry Program (1910.268) be in place and certain guidelines strictly adhered to (barricade, gas detection, blower, 3 point harness to a hoist, etc). If a hand hole is placed without a bottom the contractor shall place gravel as a mud barrier at the bottom of the hole.

#### 3) Direct Buried

Due to the lack of protection the Direct Buried solution provides for the medium it is not the preferred method of OSP connectivity for the State of Tennessee. The minimum depth and separation from other utilities applies to direct buried cable the same as underground conduit. The NEC 300.5 mandates the depth for different contiguous regions of the United States, as in every other instance the last code to verify procedures by will be local code. OSHA states that every trench 5 foot or deeper must be shored and the excavated dirt be no closer than 2 foot to the edge of the trench.

#### c) Horizontal or Work Area Conduits

All conduits installed for workstation cabling must be a minimum of ¾" conduit. Outlet boxes should be a 4" x 4" with a 2" x 4" plaster ring fed by one (1) ¾" conduit. Workstations in a back-to-back configuration may be served with a single ¾" conduit (conduit feed should be sized to meet the conduit fill ratio specified) with two (2) outlet boxes (4" x 4" with a 2" x 4"

plaster ring) connected with a conduit nipple of 6" or less. If there are more than 2 outlet boxes connected by one single stub-out then the conduit should be sized accordingly and follow standards of conduit placement. The conduit feed should stub out above the outlet or in the nearest accessible ceiling and when/if it ends before or within the communications closet it should have a plastic grommet placed on the end. If it is placed in a rated wall the stub out shall be placed on the same side of the rated wall as the outlet. Provide riser sleeves and/or conduits, with plastic bushings, for backbone (riser) cabling and sleeves above the dropped ceiling for horizontal (Work Area) cabling as required per the specifications in the State of Tennessee Cabling Infrastructure Standards or designated by a State Cabling Infrastructure Specialist. For horizontal sleeves that leave the closet, if there is an area with a inaccessible ceiling space then the sleeve should travel to the nearest accessible area. The conduits carrying ISP copper or fiber must have no more than two (2) 90° bends or a total of 180° in any single conduit run or between pull boxes. A single conduit run is defined as that of the distance the conduit travels before it passes the 180 degree standard just stated or 150 foot from pull box to pull box, which ever comes first. A minimum of two (2) 4" sleeves per room/closet should be provided.

#### 4) Backbone/Riser Cabling

The Backbone cabling provides interconnection between telecommunication closets, equipment rooms and entrance facilities. It consists of the backbone cables, intermediate and main cross-connects, mechanical terminations and patch cords or jumpers used for backbone-to-backbone cross-connection. In the situation where the riser cables pass through a communications closet there shall be ladder rack placed for the risers to be attached to for support from the floor sleeve to the deck sleeve. The bend radius should never be less than 10 times the radius of the cable itself. In the instance where an extended distance cannot be avoided the BICSI CO-OSP manual should be referenced to determine a safe pull tension. Tension can damage the ability of the cable to propagate the signal correctly. An excess of tension or speed while being placed within PVC it can meld to the PVC and become immoveable.

#### a) Copper

Copper
Distributions for voice risers or backbones are installed in a star configuration with all cables beginning in the MDF and terminating in the IDF. Riser cables should be of multi-pair design, polyethylene insulated conductors (PIC) using either filled core shielded buried, air core aerial shielded self supporting or shielded air core riser cabling as required by the application. Cable within a building must conform to specifications in the newest revision of BICSI Telecommunications Distribution Methods Manual, and cables installed in conduit or underground conduit or direct buried or aerial to another building location must conform to BICSI Customer-Owned Outside Plant Manual specifications. The riser copper cable should be sized by the number of phones placed on a floor completely built out times 2 plus a 25% growth factor, for copper OSP connecting buildings the pair count will be figured by square footage. Connection from distribution cabling to station cabling is accomplished with either cross-connect fields or patch cords. Cross-connections for Category 5/5E & Category 6 cabling must be made with patch cords with equal rating. Cross connects should include no more than two hierarchical levels of cross-connects, bridge taps are not allowed, and main and intermediate cross-connect jumper or patch cord lengths should not exceed 20 meters (66 feet). Although UTP should be used for most low voltage applications there may be circumstances where the distance requirements dictate the use many different cabling mediums. Riser cables of other types may also be required to support other applications.

#### b) Fiber

Technologies continuing to emerge that utilize greater and greater bandwidth such as voice over Internet protocol, streaming video in conference situations along with the normal data traffic accrued in an office environment create the need to lessen the chance of network bottlenecks between communications closets more and more prevalent. All new buildings or major renovations include a Multi-Mode Fiber Optic riser cable for connectivity between the MDF

and IDF (network nodes). In campus type situations it will be determined if a mutli-mode or single mode fiber will be needed.

#### 1) Multi-Mode Fiber Optic Cable

Each multi mode fiber placed cable should consist of a minimum of 12, 62.5/125um, FDDI Grade, fibers. A smaller core size fiber LOMF 50/125-micron will be specified for some sites. Larger fiber counts may be required based on the size of the building or campus and the requirements of the customer. Multi Mode fiber optic cable should be terminated with SC or LC Type connectors and distributed in a Light Guide Interconnection Unit (LIU), Light Guide Termination Shelf (LTS), or a rack mounted modular connector panel at the communications closet.

#### 2) Single Mode Fiber Optic Cable

Single mode fiber may be specified to satisfy high bandwidth or distance needs. It is ideal for large campus scenarios. Each cable should be a minimum of a 12 count, 8.3 /125µm, TIA/EIA Class 4d. Single mode shall use LC type connectors.

#### 5) Horizontal/Work Area Cabling

This is the actual cabling that connects each device to the network from the telecommunications outlet/connector as part of the faceplate in the work area to the communications closet (MDF, IDF, EF, TC etc.) also known as station cable. With this configuration, conforming to the Commercial Building Telecommunications Cabling Standard and the ANSI/TIA/EIA-568B configuration standards, all horizontal cables emanate from the IDF (Any communications closet that has station cable terminated in it can be described as an IDF, but not limited to that). It typically consists of two (2) 4 pair, Blue Category 6 plenum rated, unshielded twisted pair (UTP) cable. Both cables will terminate in an 8 position / 8 conductor Cat 6 rated ivory colored jack or outlet in a 4 port faceplate. Traveling through the designated pathway from the work area the cables will terminate in the nearest communications closet on a Cat 6 rated patch panel following both manufacture warranty of certification procedures and BICSI standards. Connection from the distribution cabling to the station cabling is accomplished with either hardwire cross-connects or patch cords. The two cables will terminate sequentially per workstation on the patch panel, not separating voice from data. A Horizontal Cabling Link is all the components of the cabling subsystem, the outlet, horizontal cable, patch panel and/or connecting block. A Horizontal Cabling Channel encompasses all the elements of the horizontal cabling link plus the equipment cable and the patch cords in the communications closet and the work area. The allowable distance of the channel is 100 meters; the allowable distance that the workstation cords and the closets cords can share is 10 meters.

All work area copper cabling and connectors conform to the following specifications:

#### **Pathways**

Communications cable pathways are the spaces occupied and the hardware involved in the distribution and support of the structured cabling traveling from the telecommunications outlet to the communications closet or from one communications closet to another. A topology is the type or direction of path the cabling travels along from the workstation outlet to the telecommunications closet. All voice and data horizontal cabling, including fiber and copper distribution cabling from one communications closet to another, is installed in a "Star" topology. By using a star topology method of cabling, administration may be performed from the MDF to each IDF without having to "daisy chain" through other communication closets or telecommunications outlet/connectors. This also provides the ability for renovation, if one closet was to be demolished, and in the event a natural disaster removed partial of the building, other areas could remain online. If there is a system or software/hardware application requiring different connectivity it should be treated as a stand-alone and provided a separate connection to the network either through an outside line or an Ethernet connection patched from an outlet or the patch panel.

Some installations require cable tray and/or enclosed wire ways. Wire way installations should conform to all applicable standards and codes. Upon reaching work area cubicles, whether the cable enters the cubicles from the wall or a power poll there will need to be either a whip run

from the wall or poll or spiral wrap. This is to protect the cables. On an existing or new construction or renovation there will be multiple low voltage systems placed in the ceiling areas. Other systems are <u>not allowed</u> to share the same support structures as the structured cabling.

#### b) Patch cords

The cross connectivity provided in the communications closet and outlet area is performed by Patch cords, sometimes called 'line cords' or station cords'. They connect the work area outlet to the workstation or other work area equipment. In reference to ANSI/TIA/EIA-568B and ISO/IEC 11801, the combination of these cables cannot exceed 33 foot as long as a consolidation point has not been utilized between the closet and the outlet.

#### c) Outlets

A typical Telecommunications outlet consists of a quad (four (4) hole) faceplate, configured for up to 4, jacks, or couplers (copper, fiber or coax). The standard configuration of each outlet has two, 4 pair, non-keyed, Category 6 jacks. Optionally, it can be equipped with an, 'F' type connector, a fiber optic connector, and/or a video coupler. Each jack is also clearly labeled to distinguish it from other jacks. The type of mounting whether it is surface, furniture, or flush, will be determined by the application and wall type. It all new construction and major renovations there will be a conduit placed in the wall (described in "Work Area Conduits"). In locations where the contractor has placed cabling into a fire rated wall then outlet box shall be required to be rated and where the cabling penetrates the wall above the ceiling will have to be fire proofed.

#### 6) Grounding and Bonding

The National Electrical Code (NEC) Article 800, Article 250, National Fire Protection Association (NFPA) 780, ANSI J-STD 607, and IEEE 1100 all have specifications that are applicable to telecommunications installations and must be adhered to. All equipment racks, wire ways, backbone cables and any other device connecting to the cabling infrastructure that could create transient voltages and potentials must be bonded together, grounded and protected in compliance to each of these. A multi-point ground system shall be attached to, at a minimum, building main panel ground with at least a #6 AWG cable from the main telecommunications grounding bus bar. NFPA 780 also requires that a communications ground must be bonded to the lightning protection system grounding within 12 feet of the base of the building. A grounding bus bar shall be placed in each telecommunications closet. Consideration should be given to placing all the electronically sensitive data equipment on this ground bus bar. This will alleviate the differences in potentials that could exist in the telecommunications closet from having separate grounds. Verification of different component warranties should be checked before this can happen. A single connection at one point and extending through the building is not acceptable. The ground wire size will be determined by the application, but a minimum 6 AWG wire is to be used, as referenced before. Where a multitude of devices are placed on one bus bar then the size of the ground wire that connects that bus bar to the appropriate building or power ground should be sized accordingly.

#### a) Lightning Protection

The NEC requires any aerial or underground cable that is exposed to the potential of coming in contact with anything carrying over 300 volts to be placed and surge protection blocks after breaching the exterior of a building on both ends. The State of Tennessee requires this for all of those situations of OSP cable entering a building. With the price and the sensitivity of all the electrical components connected to the structured cabling infrastructure the need for protection against exterior system surges is very important. At any given point where a copper cable penetrates the exterior of a building, before it can be connected to any piece of equipment, each pair shall be terminated on a panel designed for lightning protection. This panel can be composed of gas charged shocks or fuses, the first being the more common. If there is a metallic locater in the fiber this too will need to be grounded to keep the potential out of the fiber cabinet.

#### 7) Other Transport Media

With the number of legacy systems that have to remain in place within or stand alone adjacent to the new structured cabling infrastructure there can be instances where something other than the previous mentioned connectivity solutions is needed. These various cables can be used to distribute a wide range of data systems other than the typical Cat 6 for Ethernet. Some of these special design consideration cabling systems could be for a internal database with specific transfer methods, Token Ring, CATV, CCTV, Paging Systems, Building Automation cabling, nurse call cabling, video, etc. Some of the other cabling types that may be determined necessary by the analyst are Category 3 or 5, Shielded Twisted Pair Cable (2 or 4 pair), Coaxial Cable, mutli-pair conductors with predetermined connector pin-outs and different AWG size cables within the same sheath. As per state standards each of these cables must remain plenum. Each of these individual types of premise cable they will have corresponding types of termination and installation procedures recommended by the manufacturer. Because of the different signal strengths, power ratings and acceptance/emission of EMI these cables shall be placed in separate support structures along the pathways, sleeves and entry points to closets.

# 8) Infrastructure Color Coding

Using color-coded termination fields will make cable plant administration easier. The color codes for cable termination fields are:

COLOR	<u>IDENTIFIES</u>
Orange	Demarcation Point (RJ21X / LEC interface)
Green	Network Connections (Network and Auxiliary Equipment)
Purple	Common Eq. (PBX's, LAN's, Multiplexers, switching, data)
White	First Level Backbone (MC to IC or closet)
Gray	Second Level Backbone (IC to closet)
Blue	WorkStation Cable (Horizontal cable)
Brown	Inter-building Backbone (Campus Cable Termination's)
Yellow	Miscellaneous (Auxiliary, alarms, security, etc.)
Red	Reserved for future (or Key Telephone Systems)

#### 9) Disaster Planning

The possibility of a cabling disaster is usually not considered until a disaster occurs. However, because cabling involves an investment in a huge physical apparatus that can fail in any of a thousand different ways, every cabling project should include a preliminary analysis to determine whether the agency/users critical mission and its need for immediate redundant backup or if the application of the state WAN/LAN Disaster Recovery Plan is applicable.

In line with this Disaster Recovery plan, every organization should have a written disaster plan that addresses topics including alternate sites, personnel required to handle the disaster and cleanup, information records, and a detailed plan for recovery. The plan should be evaluated before the cabling is completed to ensure that the organization will not depend on any single critical element and that the recovery plan will provide adequate short-term capabilities.

# **Implementation Guidelines**

#### 1) Contractor Qualifications

Every 3 to 5 years the State of Tennessee creates and issues an RFP. From this a contractor is awarded the contract for the specified amount of time for the entire state's cabling installation. This contractor chosen must be certified by the manufacturer of the products, adhere to the engineering, installation and testing procedures and utilize the authorized manufactured components. The contractor shall be experienced in all aspects of this work and shall be required to demonstrate direct

experience on recent systems of similar type and size. At the close of each project the contractor will be responsible for the delivery of test results of all cabling involved and as-builds, in the state requested format. The contractor is responsible for the pulling of the low voltage permit where applicable and maintaining the state requirements for contractor licensure for that area.

#### 2) Abandoned Cable Removal

The most recent NEC directive states that it is mandatory to remove all "Abandoned Cable". NEC defines abandoned cable as "installed communications cable that is not terminated at both ends at a connector or other equipment and is not identified for future use with a tag". There will be two separate scenarios in which this process will be necessary.

#### a) New Construction

When there is an existing building or space that housed telecommunications equipment and the area is being completely renovated, all of the old cabling will need to be removed. In most instances this will be taken care of during the demolition phase of the current space. Note: If there are other areas in the building or space that state agencies occupy then there is a need to verify that no backbone cabling travels through the area to be demolished. This work will need to be closely scheduled with the general contractors removal of other systems within the space so there is no confusion of building systems wire with communications cable.

#### b) Renovation

In the situation of renovation and the existing system has to remain active until the new cabling infrastructure is complete, it will need to be marked as such. This will happen by tagging the old and new cables appropriately as the cables are installed. If there is an area in a new build-out that there is a need for extra cables to be placed in the ceiling area for a later install they shall be labeled as so, per NEC 645.5 and 800.2.

#### 3) <u>Labeling Scheme</u>

In a common cabling infrastructure work environment you could have multiple cables that look exactly alike placed to each employee. All of this cabling placed to a single closet, terminating in the same rack or into identical racks beside each other or in some cases multiple closets per floor. For the ability to even begin to start patching or moving users or troubleshooting there has to be in place a defined labeling scheme. Because of the different configurations of voice/data applications per outlet there also has to be a common symbol per outlet type. BICSI symbols from the TDMM's will be used as the state standard. A labeling scheme will also prevent the inadvertent placement of different types of cabling in the same support structures. At each point a riser or entrance cable (fiber or copper) enters or leaves a communications closet or room it should be labeled as exactly what it is and where it is being terminated or spliced on the other end. Any homerun conduits leaving the closet should be labeled as to where they end. Before any new cables are placed the contractor shall look at the last number in sequence and label new cables from that point.

#### a) Closet

Closet doors will be labeled with the proper designation, i.e.,

FF = Floor Number 00 - 99, i.e., or applicable designation.

C = Closet Number A - Z

#### b) Rack

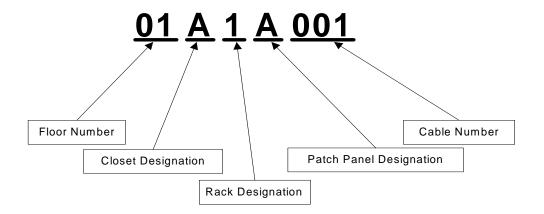
Racks will be identified in each Telecommunications Closet using a one digit alphanumeric symbol. Racks will be numbered sequentially, 1 thru 9, depending upon the number of racks. If racks are not used, i.e., wall mounted shelves, the same scheme applies. The shelves will be numbered as if it were a rack.

#### c) Patch Panel or 110 Block

Patch Panels will be identified in each Telecommunications Closet using an alpha character, A thru Z, depending upon physical location on patch panel, numbered from top to bottom.

#### d) Workstation outlet

All cables will be labeled with a nine digit alphanumeric symbol as follows. One label will be associated with each jack or outlet, therefore one label will be associated with each jack or outlet; a dual faceplate with 2 jacks will have 2 labels; a quad faceplate with 4 jacks will have 4 labels; etc. Spaces not required.



# 4) Installation

The State of Tennessee has utilized AVAYA cabling since the conception of an effort to install a structured cabling solution. For continuity and compatibility the new contract has been written so that the contractor shall only place end-to-end solution of what is now Systimax/CommScope plenum cabling and connectivity. Some end users and designers believe that small installations. especially those using unshielded twisted pair cables, are simple and easy to install and often will install one or more cables without proper qualifications. This often results in incorrect or poor installations. Cable installation requires attention to minute details and care in handling the medium. All components must match the specified category 6 UTP end-to-end solution criteria, such as the connectors, patch panels, patch cords, support structures, etc. to attain the Giga-speed transmission. Category 6 UTP installers can untwist no more of the sheath than it takes to keep it out of the cap. The State of Tennessee specifies that all cable installations be adequately tested, covered in "Acceptance Testing". There shall be no splices placed in horizontal balanced twisted pair cable. With the specifications of Cat 6 cable there should not be a service loop placed at the outlet location. In the communications closet the distance the cabling travels before it mounts into the rack and patch panels is part of the loop, as shown in the drawing (entering comm. room away from termination side of rack).

# a) Physical Factors affecting installation

There are many physical factors to consider about structured cabling, including weight, diameter, bending radius, pull force, and termination all of which can cause degradation of the signal being transmitted through the cable. Cables have pull load and geometric deformation limits. If pulled too hard, a copper medium can stretch and destroy the geometry. Kinking, bending, and crushing can also damage cables by either breaking the medium or causing geometric deformations that can degrade performance significantly.

#### 1) Cable Weight

Cable weights become important in suspended ceiling loads due to the number of cables that are being supported. Cabling shall never hang from other equipments support. All cabling installed shall have its own Cat6 rated J-hooks, cable tray, etc. The number of cables placed in the supporting device should follow manufacture directions. Cables should be supported every 5 to 10 feet, depending on the number of cables in the bundle, to prevent sags and eventual cable failure. Bridle rings and tiewraps to ceiling grid hangers or conduit are not acceptable. Cables should never support connected devices (e.g., amplifiers, splitters, and transceivers). These devices must be individually attached to a wall, ceiling, or other sturdy structure.

#### 2) Bending Radius

Minimum bending radius becomes extremely important when installing cables. Fiber-optic cable, in particular, is extremely sensitive to bend radius, and kinks in fiber-optic cable can render the cable useless. All cables, regardless of type, must be installed with as few bends as possible. If manufacturers specifications are not available, a general 'rule of thumb' for copper cable is a bend radius of not less than 10 times the outside

diameter of the cable, and for fiber optic cable, 15 times the outside diameter is usually sufficient. During installation the cables maximum bend radius will be less than it would be during actual working conditions.

#### 3) Pull Force

Pull force determines how hard the cable can be pulled. Connectors must never be used to pull cables, since the connectors often break. A 2 to 4 strand count fiber-optic cables have a maximum pull force of 50lbf, while 4-pair UTP cable has a maximum pull force of 25 lbf. Manufacturer specifications should be followed according to the number of copper or fiber strands there are in the cable that is being placed. The 25 lbf for 4-pair UTP does not work as a multiple per number of cables that are in the bundle being placed.

# 4) Termination

This applies to both ends of all cables. Terminations include the 110 punch down block, patch panel, LIU (shelf or wall mount), lightning protection blocks in the closet, the registered jacks, coaxial connectors or fiber connectors in the faceplate at the work area, the ends of the patch cords in both the work area and the closet, and any other termination point or end to a cable run. Unused cable ends must be properly terminated to reduce accidental shorts and electrical problems. According to NEC requirements an abandoned cable is one that is not terminated at both ends, so if any cables fit this guideline they will have to be removed or tagged for future use. Termination equipment (connectors, patch panels, etc.) must meet the specifications of the type and grade of cable used in the installation plus be of the same manufacture for an end-to-end solution. Cable termination units are color-coded to reduce installation errors. Wall plates are designed to hold multiple (one to eight) voice and data connectors. All connectors in a cabling installation must be clearly labeled.

#### 5) Conduit Fill ratio

The conduit fill ratio is comprised of both cable degradation issues and fire codes. The maximum number of cables that can be in a conduit that penetrates a rated wall or the traverses from one level of a building to another level is shown in the table below. This is standardized due to the expansion rate of fire caulk or putty in a fire situation.

Maximum Percent Conduit Fill		
53		
31		
40		

The maximum number of cables allowed in a conduit run is limited to the number of 90-degree bends and there must be less than 150 foot between pull boxes. If an excess number of cables are placed within a conduit then the bend radius and pull tension degrade the ability of the cable to perform.

#### 6) Fire Wall Penetrations

Any wall that is considered rated must meet the fill ratio requirements and have adequate fire caulk and rock wool in place or it will not pass the Fire Marshall inspection. When a contractor penetrates an existing sleeve that has been caulked for fire propagation prevention it is his responsibility to return or to make sure the rating of the wall has not been degraded because of the sleeve.

#### b) Wire Management

0

Cabling installers must be certain that every cable has labels conforming to TIA/EIA standards. The few minutes spent planning and marking additions or moves can save many hours of sorting out the cabling scheme later.

#### 5) Acceptance Testing

To comply with the high expectations and the tender nature of the cabling placed we need to verify the manufacture's specifications and contractor's installation practices through acceptance testing. This same test equipment can be utilized for troubleshooting of the cable.

# a) Test Equipment

All test equipment will need to be calibrated at the manufacture's required time frames and records kept to show results of calibration. Testing of all cabling shall be performed prior to system cutover. All fiber launch cords or copper patch cords that will be used for testing shall be the ones used for calibration and to establish reference points.

#### 1) Manufacturers Warranty

The Contractor, backed by the manufacturer, shall provide a minimum (20) year Extended Product Warranty and System Assurance Warranty for this Systimax/CommScope cabling system. This warranty shall include the end-to-end channel.

#### 2) OTDR

An Optical Time Domain Reflectometer (OTDR) identifies irregularities, breaks, splices, length and other discontinuities in fiber-optic cable. By reviewing the events of the fiber trace you can approximate where the actual irregularity is in the fiber. The basic tools for troubleshooting fiber-optic cable include an optical power meter, light source, and inspection microscope along with the OTDR.

#### 3) Power Meter

The Power meter will show the total loss (in dB) for the entire length of the fiber in both directions by measuring end-to-end attenuation, splice and connector loss, light intensity, and continuity. Power meter results are obtained by testing each fiber in both directions at each wavelength and the end result is the correlating wavelength sum divided by 2.

#### 4) Copper multi-tester

This device shall be programmed, calibrated and certified from the manufacturer to test the CAT6 parameters defined by ANSI/TIA/EIA 854.

#### b) Fiber

All fiber testing shall be performed on all fibers in the completed end-to-end system per the parameters of TIA-455 series. Testing will be done with the fore mentioned OTDR and Power Meter. The system loss measurements will be recorded at 850 and 1300 nanometers for Multi-Mode fibers and 1310 and 1550 for Single Mode fibers.

#### 1) Loss Budget

To calculate the maximum allowable loss a single connector-to-connector fiber link shall have you take the (maximum insertion loss per km –different per fiber type) times (# of km's in fiber link) + (.5dB) times (number of connectors) = maximum allowable loss. This number will be compared to the power meter results for determination of allowable loss. This procedure should only occur after the Power meters have been referenced to each other with the launch cords that will be used for testing.

Multi Mode (both 62.5 & 50 micron)	850 nm	3.5 dB/km
	1300 nm	1.5 dB/km
Single Mode (8.3 micron)	1310 nm & 1550 nm	1.0 dB/km

#### c) Copper

100 % of all copper riser cables will be tested for breaks, open or crossed pairs. Category 6 cables have a bandwidth of 200MHz and are designed to support the more robust bandwidth applications so they all have top be tested for conformance per the specific parameters that denote their transmission specifications found in ANSI/TIA/EIA 568B Category 6. These basic link parameters are Insertion Loss, Near End Cross Talk (NEXT), Power Sum Equal Length Far End Cross Talk (PSELFEXT), Return Loss, Length, Characteristic Impedance, Attenuation, and Wire map. All other category wire also has to be tested at it's own specific parameters

#### d) Pre-Installation Testing

All Light Guide cable will be tested prior to the installation of the cable. The Contractor assumes all liability for the replacement of the cable should it be found defective at a later date.

#### GLOSSARY

ANSI American National Standards Institute

**AWG** American Wire Gauge

**BICSI** Building Industry Consulting Service International

**CATV** Community Antenna Television

CCIR Consultative Committee on International Radio

**CCTV** Closed Circuit Television

CO-OSPDM BICSI Customer-Owned Outside Plant Design Manual

**DEMARC** Local Exchange Carrier Demarcation Point

**EF** Entrance Facility

EIA Electronic Industries Association
EMI Electromagnetic Interference

FCC Federal Communications Commission
FDDI Fiber Distributed Data Interface
IDF Intermediate Distribution Frame (IC)

**IEEE** Institute of Electrical and Electronics Engineers

ISDN Integrated Services Digital Network
ISO International Standards Organization

LAN Local Area Network

LEC Local Exchange Carrier (Telephone Company)

MDF Main Distribution Frame (MC)

MAU Media Access Unit or Multi-Station Access Unit

NEC National Electrical Code

**NEMA** National Electrical Manufacturers Association

**NFPA** National Fire Protection Association

**OIR** Office for Information Resources (State of Tennessee)

OSHA Occupational Safety and Health Act
OTDR Optical Time Domain Reflectometer

PBX Private Branch Exchange
PIC Plastic Insulated Cable
POTS Plain Old Telephone Service
RFI Radio Frequency Interference
REA Rural Electrification Administration

SAN Storage Area Network

ScTPShielded Twisted Pair (foiled twisted pair – FTP)TDMMTelecommunications Distribution Methods Manual

TIA Telecommunication Industries Association
TP-PMD Twisted Pair - Physical Medium Dependent

TSB Technical Service Bulletin
UL Underwriters Laboratories
UTP Unshielded Twisted Pair
WAN Wide Area Network

Hallway

# STANDARD NETWORK SECURITY ENCLOSURES

#### SMALL INSTALLATIONS - 1TO 24

A wall cabinet with a "T-lock" will be installed in a place selected by the state Cabling Group. Cabinet will be 42" x 24.2" x 14" with capacity for 4 shelves.



#### MEDIUM INSTALLATIONS- 25 TO 48

A wall cabinet with a "T-lock" will be installed in a place selected by the state Cabling Group. Cabinet will be 24" x 22" x 26" with capacity for 12 shelves.



#### LARGER INSTALLATIONS - 49 +

A floor cabinet with a "T-lock" will be installed in a place selected by the state Cabling Group. Cabinet will be 84" x 29" x 36" with capacity for 46 shelves.



#### WIRING CLOSET

Floor racks will be installed to hold all equipment. These racks will be 7' x 19". This floor rack can only be used in a locked Communications Room where access is limited to state personnel.



Access to all cabinets will be controlled through the "T-Locking" system. All cabinets will have the same key so access by multiple state departments technicians and vendors is possible. "T's" will be left with non-consolidated agency locations but not consolidated locations. Updated "T" distribution lists will be maintained by vendor and supplied to the Cable Group to keep security tight. The universal "T" locking system will allow for manufacturer substitutions/upgrades and changes in the states requirements.

End of Form

# **CONTRACT BOND**

# TENNESSEE STATE BUILDING COMMISSION STANDARD FORM

BOND NO.
Know all men by these presents: that we
(hereinafter called the "Principal") and
hereinafter called the "Surety") do hereby acknowledge ourselves indebted and securely bound and held unto
(hereinafter called the "Owner"), and in the penal sum of
good and lawful money of the United States of America, for the use and benefit of those entitled thereto, for the payment of which, well and truly to be made, we bind ourselves, our heirs, our administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.  But the condition of the foregoing obligation or bond is this:  Whereas, the Owner has engaged the principal for the sum of
to complete the Work of the project titled:
as more fully appears in a written agreement or contract bearing the date of
a copy of which said agreement or contract is by reference hereby made a part hereof, as fully and to the same extent as if copied at length herein, and it is the desire of the Owner that the Principal shall assure all undertakings under said agreement or contract and shall assure and protect all laborers and furnishers of material on said Work both as provided by Tennessee Code Annotated Sections 4-15-102 (f)(2) and 12-4-201 through 12-4-206, and any

and all amendments thereto, and shall assure the prompt payment of claims as provided by Tennessee Code Annotated Sections 12-4-207 through 12-4-208, and any and all amendments thereto. The Principal shall also comply with provisions of Tennessee Code Annotated Sections 12-4-401 through 12-4-415, and any and all

amendments thereto, pertaining to the payment of the prevailing wage rate.

Now, therefore, if the Principal shall fully and faithfully perform all undertakings and obligations under the contract herein before referred to and shall fully indemnify and hold harmless the Owner from all costs and damage whatsoever which it may suffer by reason of any failure on the part of the Principal to do so, and shall fully reimburse and repay the Owner any and all outlay and expense which it may incur in making good any such default, and shall fully pay for all of the labor, material and work used by the Principal and any immediate or remote sub-contractor or furnisher of material under him in the performance of said contract, in lawful money of the United States, as the same shall become due, then this obligation or bond shall be null and void, otherwise to remain in full force and effect.

And for value received, it is hereby stipulated and agreed that no change, extension of time, alteration or addition to the terms of the contract or to the Work to be performed thereunder or to the specifications accompanying the same shall in any wise affect the obligation under this bond, and notice is hereby waived of any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the specifications.

In witness whereof the Principal has hereunto affixed its sign	nature and Surety has hereunto caused to be affixed its
corporate signature and seal, by its duly authorized officers, or	n this day of, 20
Executed in counterparts.	
Witness:	
(name of Principal)	(name of Surety)
(authorized signature)	(signature of Attorney-in-fact)
(name of signatory)	(name of Attorney-in-fact)
(title of signatory)	(Tennessee license number of Agent or Attorney-in-fact)
	(countersignature of resident Agent
	if not same as Attorney-in-fact)

Surety Company issuing bond shall be licensed to transact business in State of Tennessee by Tennessee

Department of Commerce and Insurance. Bonds shall have certified and current Power-of-Attorney for the Surety's

Attorney-in-Fact attached. Attorney-in-fact who executes bond on behalf of Surety shall be licensed by and a
resident of State of Tennessee, and shall affix license number to bond; or, countersignature by a licensed agent who
is a resident of State of Tennessee, and the agent's license number, shall be affixed to the bond in addition to the
signature of the Attorney-in-Fact.

# **Combined Request and Decision form for**

# **Wage Determination**

Request made by				
Name of person		Steven Andress		
Title		Project Manager		
Department, Agency, or Bureau		Dept. of Finance and Administration Office of Information Resources		
Address, phone, fax	V	William Snodgrass Tenn. Tower 16 <sup>th</sup> Floor 312 8 <sup>th</sup> Ave. N. Nashville, TN 37243 Tel 615-741-7395		
Date of request		Date of Advertisement	Supercedes Decision	
29 November 2007		5 December 2007		

If Work is in multiple building rates regions, then a separate request is required for each region; and, if in multiple counties within a region, then all counties within each region must be listed.

_				
The Project				
City State County				
Nashville	TN	Davidson		
Proje	ct Identific	ation		
Premise Cab	ling and C	Configuration		
SBC Project No. 529/000-28-2007				
Brief Pr	roject Desc	cription		
Selection of a low voltage contractor through RFP process to provide telecommunications wiring installations and configurations Statewide.				

# **Decision rendered by**

State of Tennessee
Dept. of Labor and Workforce Development
Labor Standards Division
404 James Robertson Parkway, Suite 1606
Nashville, Tennessee 37243-0657

Wage Determination				
Decision T-32105 Number				
Building R	ates		Apply Do not apply	
Highway R	ates		Apply Do not apply	
Report to				
DEPT OF LABOR & WORKFORCE DEV <b>DIVISION OF LABOR STANDARDS</b> 220 French Landing Drive NASHVILLE TN 37243-0657				
Date assigned Assigned by				
11/29/07	11/29/07 Mary Ellen Grace			

The project identification and brief project description given herein shall not act to define, expand, or limit the Work required by the Contract Documents. Such information provided herein is intended only as information to the Department of Labor and Workforce Development. No other use or interpretation is intended.